

#1

Access DB# 223708

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sim J. Lee Examiner #: 76060 Date: 4-30-07  
Art Unit: 1752 Phone Number 302-1333 Serial Number: 10/531,208  
Mail Box and Bldg/Room Location: 9C15 Results Format Preferred (circle): PAPER DISK E-MAIL  
(Rem)

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See B-6.

Inventors (please provide full names): \_\_\_\_\_

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf. Ctr

Earliest Priority Filing Date: \_\_\_\_\_

MAY 3 RECD

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

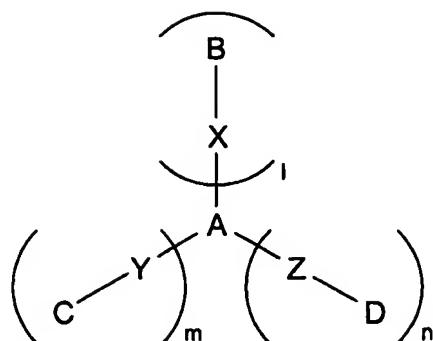
Pat. & T.M. Office

Please search for the organic compound of formula (1)  
of Cl. #18.

\*\*\*\*\*

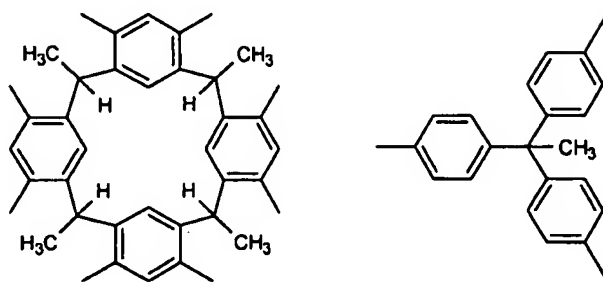
### STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>EL</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>5-10-07</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

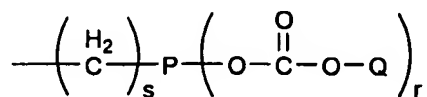


(1)

wherein A is an organic group represented by



each of B, C and D is independently tert-butyloxycarbonylmethyl, tert-butyloxycarbonyl or an organic group represented by



in which P is an aromatic group having a valence of  $(r + 1)$  and having 6 to 20 carbon atoms, Q is an organic group having 4 to 30 carbon atoms, r is an integer of 1 to 10 and s is an integer of 0 to 10,

each of X, Y and Z is independently a single bond or an ether bond, and

$l + m + n = 3$  or 8.

Claim 10 (currently amended): A photoresist composition comprising a solid content containing the photoresist base material recited in ~~any one of claims 1 to 7~~ claim 1 and a solvent.

Claim 11 (original): A photoresist composition comprising a solid content containing the photoresist base material recited in claim 9 and a solvent.

Claim 12 (original): The photoresist composition as recited in claim 10 ~~or 11~~, which further comprises an optically-acid-generating agent.

Claim 13 (original): A method for purification of a photoresist base material, which comprises washing the photoresist base material recited in ~~any one of claims 1 to 7~~ claim 1 with an acidic aqueous solution and treating the material with an ion-exchange resin.

Claim 14 (currently amended): The method for purification of a photoresist base material as recited in claim 13, wherein said acidic aqueous solution is an acetic acid aqueous solution.

Claim 15 (currently amended): A method for improvement of the photoresist base material recited in ~~any one of claims 1 to 7~~ claim 1 in radiation sensitivity, which comprises decreasing the content of basic impurities to 10 ppm or less.

Claim 16 (currently amended): A method for fine processing by lithography, which uses the photoresist composition recited in claim 10 ~~or 11~~.

Claim 17 (currently amended): A semiconductor device fabricated using the photoresist composition recited in claim 10 ~~or 11~~.

Claim 18 (original): An organic compound represented by the following general formula (1),

=> FILE REG

FILE 'REGISTRY' ENTERED AT 15:08:38 ON 10 MAY 2007  
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=> D HIS

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E ADAMANTINE/CN

L1 1 S E5  
L2 STR 768-90-1

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L3 50 S L2

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L4 198 S 638.8.1/RID  
L5 STR  
L6 15 S L5  
L7 257 S 1839.6.36/RID

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L8 106777 S L4  
L9 108589 S L7  
L10 19885 S ((C (L) H (L) O)/ELS (L) 3/ELC.SUB) AND (L8 OR L9)

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L11 41681 S UEDA ?/AU  
L12 36946 S ISHII ?/AU  
L13 570 S L11 AND L12  
L14 5993 S UEDA M?/AU  
L15 4713 S ISHII H?/AU  
L16 28 S L14 AND L15  
L17 13402 S PHOTORESIST?/TI  
L18 4 S L16 AND L17  
SEL L18 1-4 RN

FILE 'REGISTRY' ENTERED AT 11:42:55 ON 10 MAY 2007  
L19 27 S E1-E27  
L20 5 S L19 AND (L8 OR L9)  
L21 14827 S L10 NOT PMS/CI  
L22 27 S L2 SSS SAM SUB=L21  
L23 STR L2  
L24 SCR 1707  
L25 50 S L23 AND L24 SSS SAM SUB=L21  
L26 8407 S L23 AND L24 SSS FUL SUB=L21



SAV L26 LEE208/A  
L27 20 S L2 SSS SAM SUB=L26  
L28 STR L2  
L29 SCR 1304 OR 1526  
L30 16 S (L2 NOT L29) SSS SAM SUB=L26  
L31 10 S (L28 NOT L29) SSS SAM SUB=L26  
L32 STR L28  
L33 0 S (L32 NOT L29) SSS SAM SUB=L26  
L34 80 S (L32 NOT L29) SSS FUL SUB=L26  
SAV L34 LEE208A/A  
L35 51 S L34/COMPLETE

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L36 2 S L26 AND L19

FILE 'HCA' ENTERED AT 12:04:51 ON 10 MAY 2007

L37 1 S L36  
L38 33 S L35  
L39 51 S L34  
L40 192166 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK  
L41 12 S (L37 OR L38) AND L40  
L42 13 S L39 AND L40  
L43 13 S L41 OR L42  
L44 38 S L39 NOT L43  
L45 9 S 1840-2002/PY,PRY AND L43  
L46 24 S 1840-2002/PY,PRY AND L44

FILE 'REGISTRY' ENTERED AT 13:07:27 ON 10 MAY 2007

L47 290 S C32H32O8  
L48 1 S L19 AND L47

FILE 'LREGISTRY' ENTERED AT 13:08:53 ON 10 MAY 2007

L49 STR 65338-98-9  
E TRIPHENYLMETHANE/CN  
L50 1 S E3  
L51 STR L49  
L52 STR L32  
L53 STR L51

FILE 'REGISTRY' ENTERED AT 13:25:49 ON 10 MAY 2007

L54 26 S L53  
L55 48 S L53 AND L24 NOT L29  
L56 5905 S L53 AND L24 NOT L29 FUL  
L57 1566 S L56 AND (C (L) H (L) O)/ELS AND 3/ELC.SUB

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L58 1174 S L57  
L59 220 S L58 AND L40

FILE 'LREGISTRY' ENTERED AT 14:47:43 ON 10 MAY 2007

L60 STR L53

FILE 'REGISTRY' ENTERED AT 14:59:41 ON 10 MAY 2007

L61 14 S L60 SSS SAM SUB=L56

L62 STR L60

L63 7 S L62 SSS SAM SUB=L56

L64 SCR 2043

L65 6 S L62 NOT L64 SSS SAM SUB=L56

L66 125 S L62 NOT L64 SSS FUL SUB=L56

SAV L56 LEE208B/A

SAV L66 LEE208C/A

L67 89 S L66 AND L57

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L68 90 S L67

L69 75 S L68 AND L40

L70 65 S 1840-2002/PY,PRY AND L69

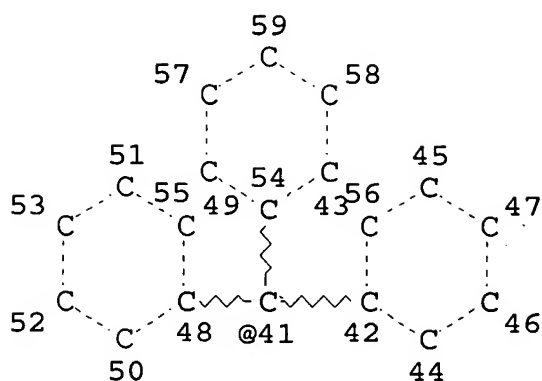
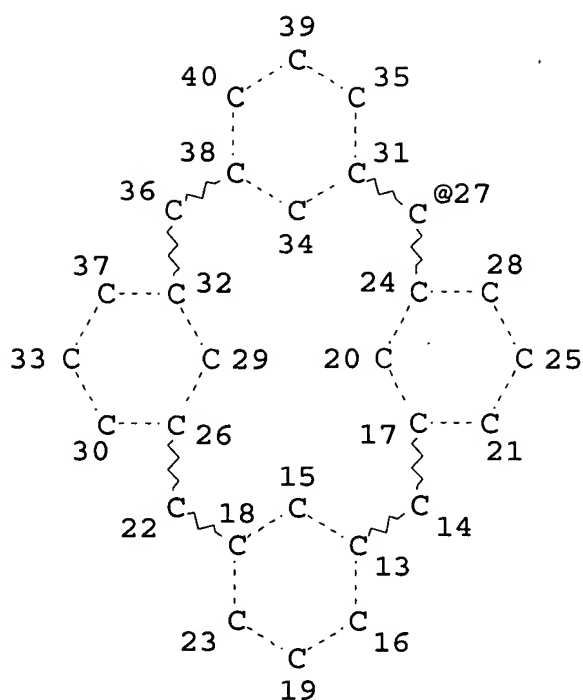
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=> D L66 QUE STAT

L24 SCR 1707

L29 SCR 1304 OR 1526

L53 STR



Ak~O~CH2  
74 73 @72

61

Cb~O~CH2  
77 76 @75

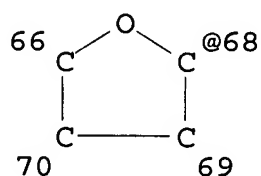
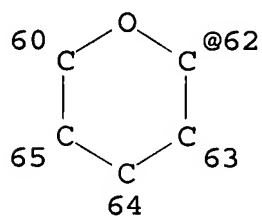
67

t-BuO @71

G1 78

G2 80

Page 1-A



Page 2-A

VAR G1=27/41

VAR G2=72/75/71/62/68

NODE ATTRIBUTES:

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CONNECT IS M3 RC AT 53

CONNECT IS M3 RC AT 59

CONNECT IS E1 RC AT 74

DEFAULT MLEVEL IS ATOM

GGCAT IS LIN SAT AT 74

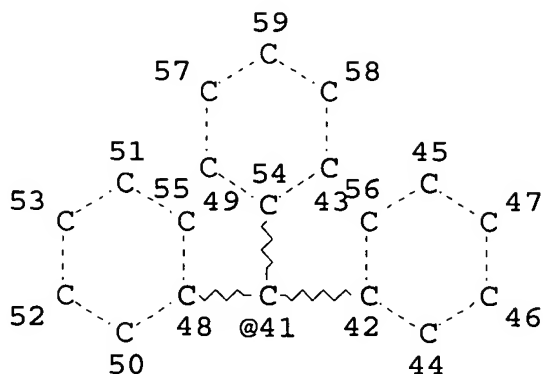
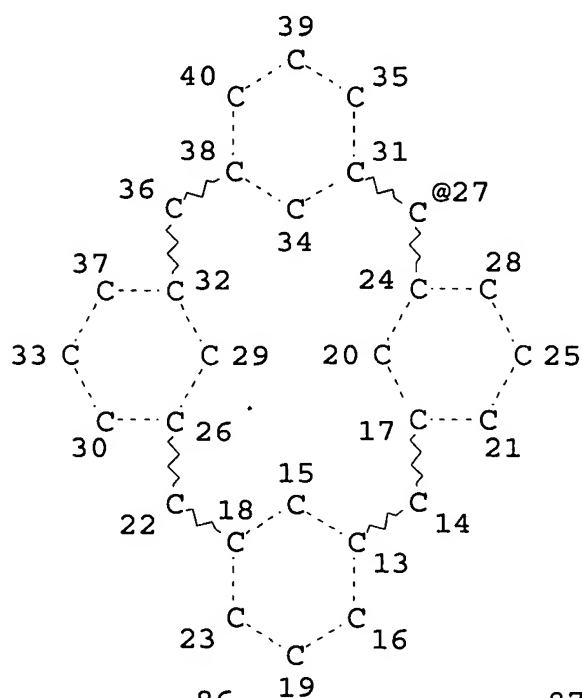
GGCAT IS UNS AT 77  
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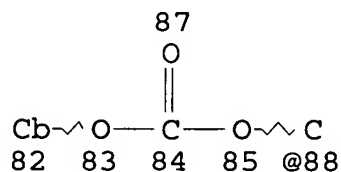
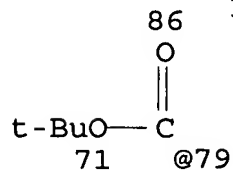
STEREO ATTRIBUTES: NONE

L56 5905 SEA FILE=REGISTRY SSS FUL L53 AND L24 NOT L29

L62 STR



G1 78



G2 91

VAR G1=27/41

VAR G2=79/88

NODE ATTRIBUTES:

NSPEC IS RC AT 88

CONNECT IS M1 C AT 16

CONNECT IS M3 RC AT 47

CONNECT IS M3 RC AT 53

CONNECT IS M3 RC AT 59

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
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NUMBER OF NODES IS 58

STEREO ATTRIBUTES: NONE

L64 SCR 2043

L66 125 SEA FILE=REGISTRY SUB=L56 SSS FUL L62 NOT L64

100.0% PROCESSED 504 ITERATIONS

125 ANSWERS

SEARCH TIME: 00.00.01

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=> D L70 1-65 CBIB ABS HITSTR HITIND

L70 ANSWER 1 OF 65 HCA COPYRIGHT 2007 ACS on STN

140:383102 **Photoresist** base material, method for purification thereof, and **photoresist** compositions containing the same.

Ueda, Mitsuru; Ishii, Hirotoishi (Idemitsu Kosan Co., Ltd., Japan).

PCT Int. Appl. WO 2004036315 A1 20040429, 56 pp. DESIGNATED STATES:

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.

APPLICATION: WO 2003-JP11137 20030901. PRIORITY: JP 2002-300144 20021015; JP 2003-112458 20030417.

AB The invention relates to **photoresist** base materials consisting of extreme UV sensitive-org. compds. represented by the general formula (B-X)l(C-Y)m(D-Z)nA: [wherein A is a central structure consisting of an aliph. group having C1-50, an arom. group having C6-50 carbon, an org. group bearing both, or an org. group having a cyclic structure formed by repetition of these groups; B to D are each an extreme UV sensitive group, a group exhibiting a reactivity on the action of a chromophore sensitive to extreme UV rays, a C1-50 aliph. or C6-50 arom. group having such a group, an org. group having both groups, or a substituent having a branched

structure; X to Z are each a single bond or an ether linkage; l to n are integers of 0-5 satisfying the relationship:  $l + m + n < u$ ; and A to D may each have a heteroatom-bearing substituent]. The invention provides **photoresist** base materials and **photoresist** compns. which enable ultrafine lithog. with extreme UV rays or the like and is suitable for use in semiconductor device fabrication.

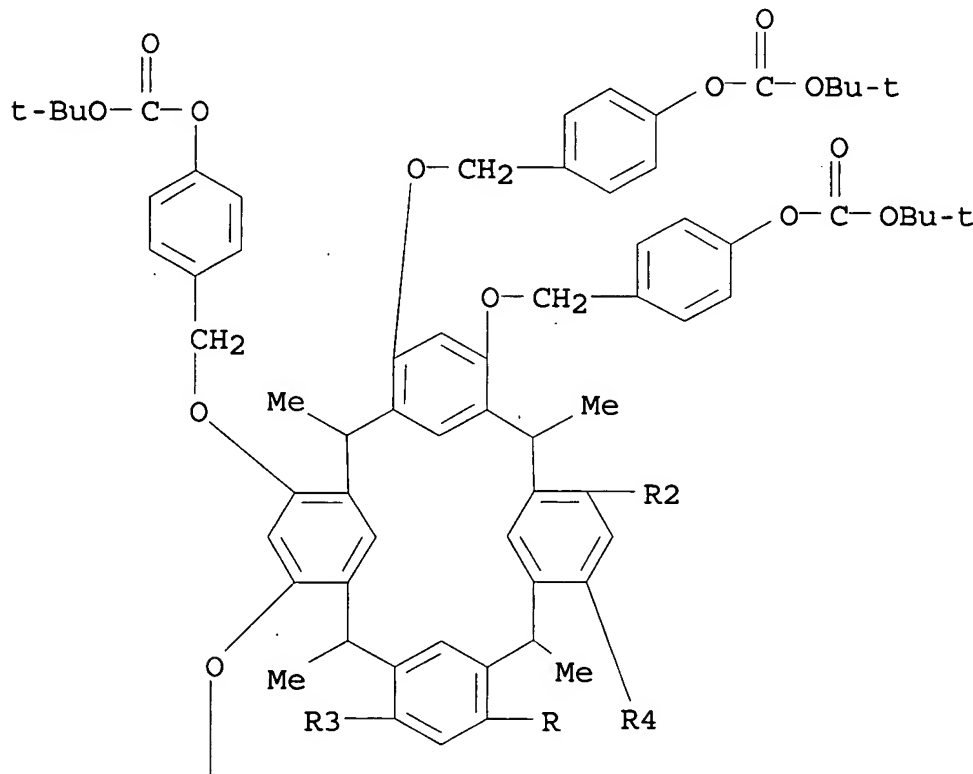
IT 683227-74-9P 683227-75-0P 683227-76-1P

(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)

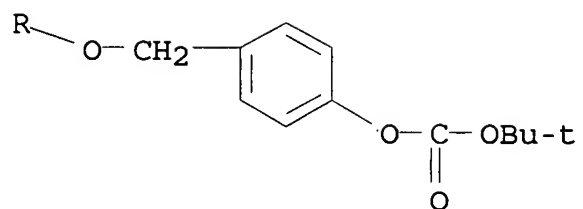
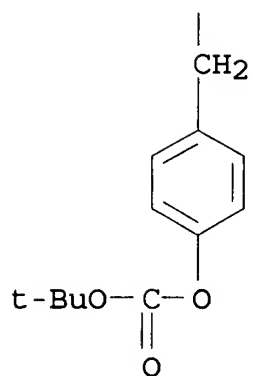
RN 683227-74-9 HCA

CN Carbonic acid, (2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.11 5,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl)octakis(oxymethyl-4,1-phenylene) octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

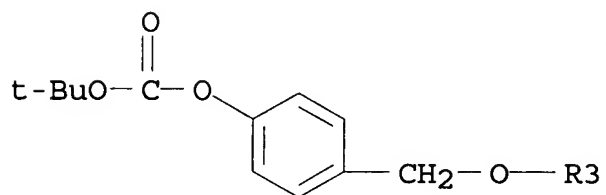
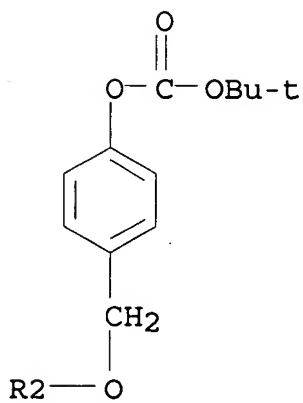
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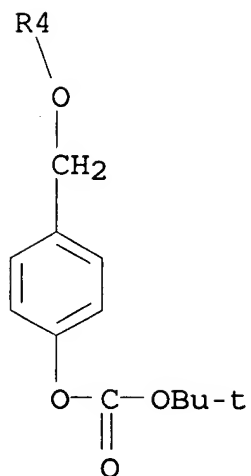
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PAGE 3-A



PAGE 4-A

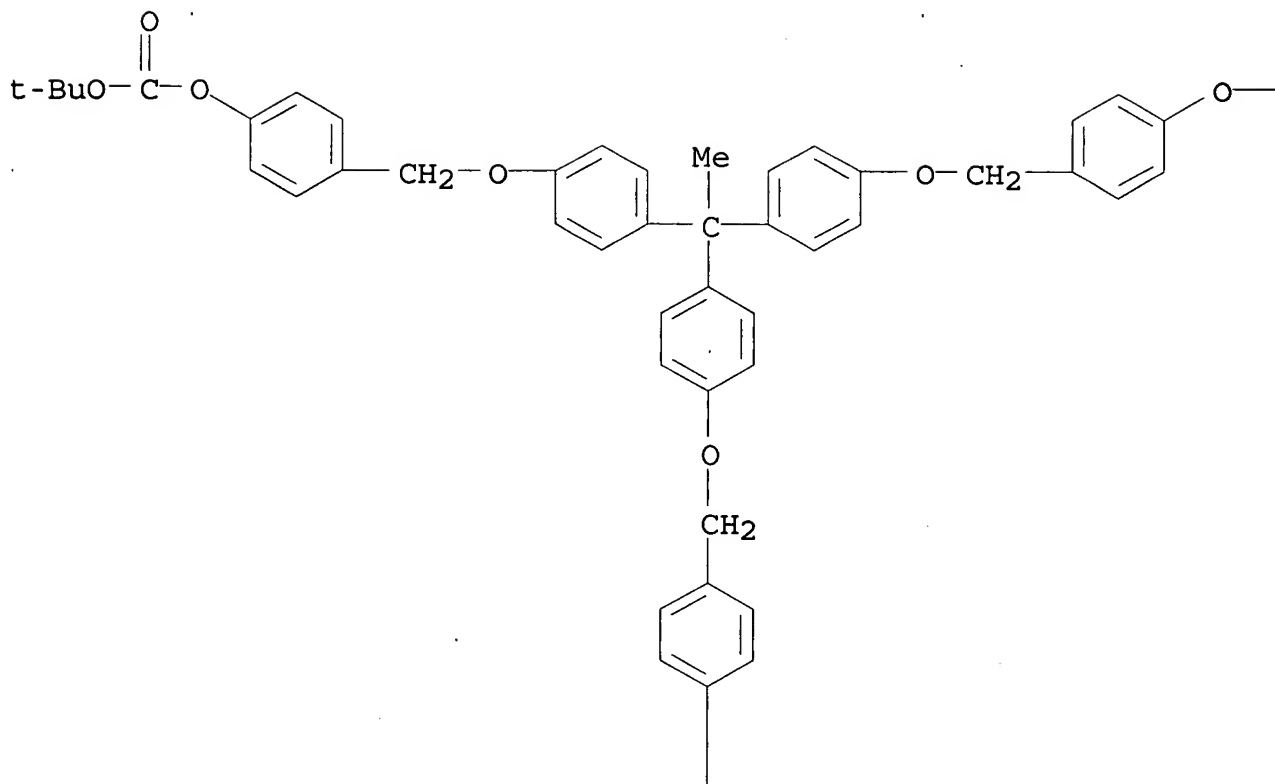


RN 683227-75-0 HCA

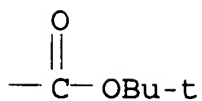
CN Carbonic acid, ethylidynetris(4,1-phenyleneoxymethylene-4,1-phenylene) tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



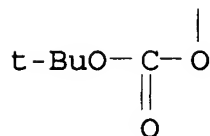
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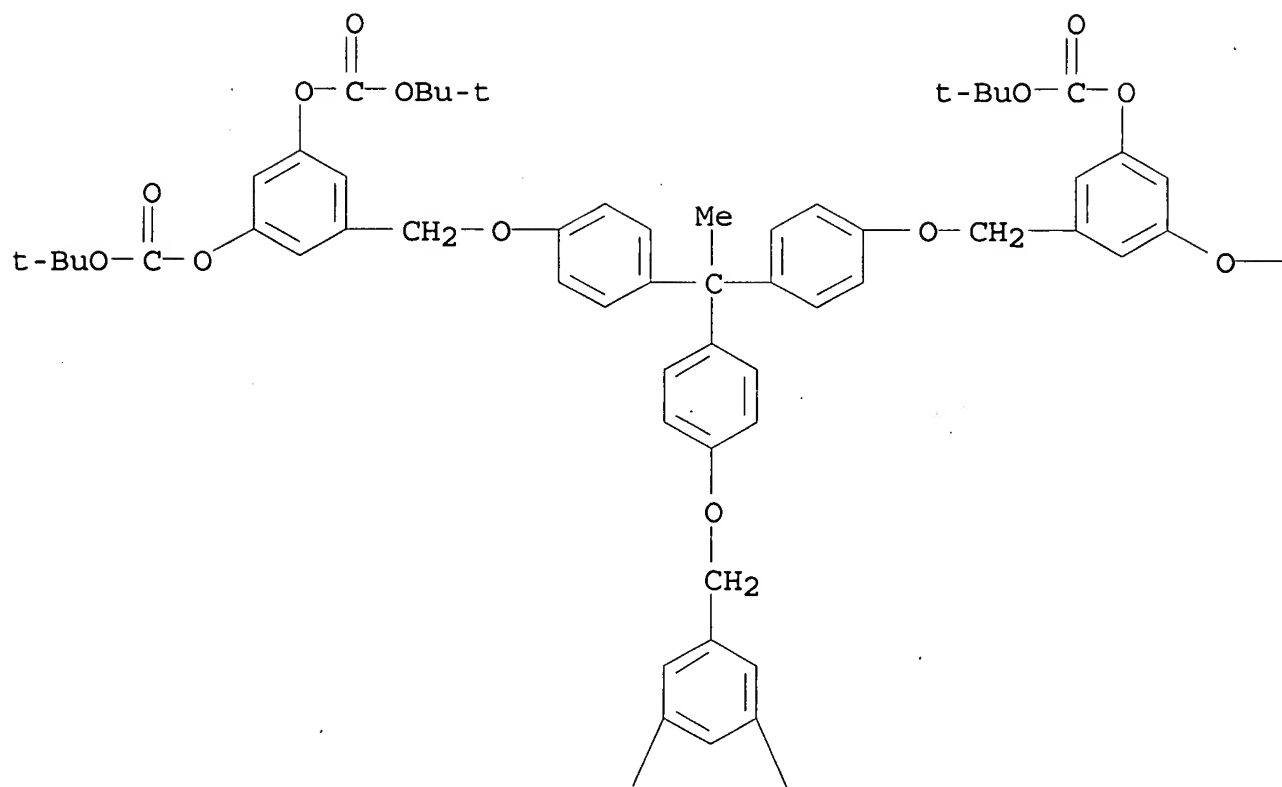


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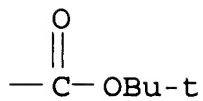


RN 683227-76-1 HCA  
 CN Carbonic acid, ethylidynetris(4,1-phenyleneoxymethylene-5,1,3-benzenetriyl) hexakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

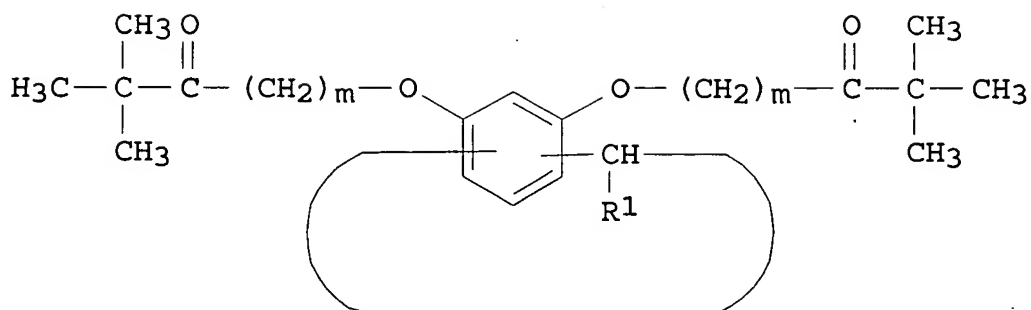


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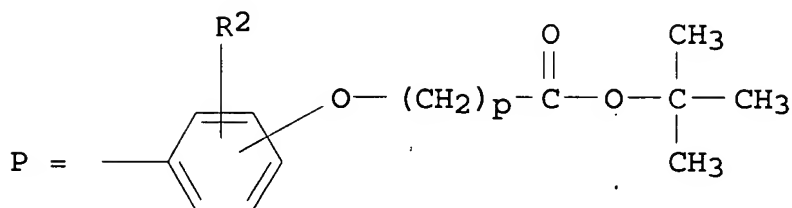


- IC ICM G03F007-039  
ICS C07C039-17; C07C069-736; C07D309-04
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST **photoresist** compn
- IT Light-sensitive materials  
**Photoresists**  
Recrystallization  
Semiconductor device fabrication  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT Distillation  
(vacuum; **photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT 65338-98-9DP, tetrahydropyranyl and benzyl deriv. ethers  
125748-07-4P, Calix[4]resorcinarene 211427-64-4P 683227-72-7P  
683227-73-8P 683227-74-9P 683227-75-0P  
683227-76-1P  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT 75-07-0, Acetaldehyde, reactions 108-46-3, Resorcinol, reactions 110-87-2, Dihydro-2H-pyran 623-05-2, 4-Hydroxybenzyl alcohol 1927-95-3, 4-Bromophenyl acetate 5001-18-3, 1,3-Dihydroxyadamantane 5292-43-3, tert-Butyl bromoacetate 24424-99-5, Di-tert-butyl dicarbonate 27955-94-8 29654-55-5, 3,5-Dihydroxybenzylalcohol 99181-50-7, 1,3,5-Trihydroxyadamantane  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT 156281-11-7P, 4-(tert-Butoxycarbonyloxy)benzylalcohol  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- L70 ANSWER 2 OF 65 HCA COPYRIGHT 2007 ACS on STN  
139:388462 tert-Butoxycarbonylalkoxycalixresorcinarenes having high solubility in casting solvents and radiation sensitive positive **resists** containing the same. Nishikubo, Tadaomi; Kudo, Hiroto (JSR Ltd., Japan; Kanagawa University). Jpn. Kokai Tokkyo Koho JP 2003321423 A 20031111, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-133996 20020509.

GI



I



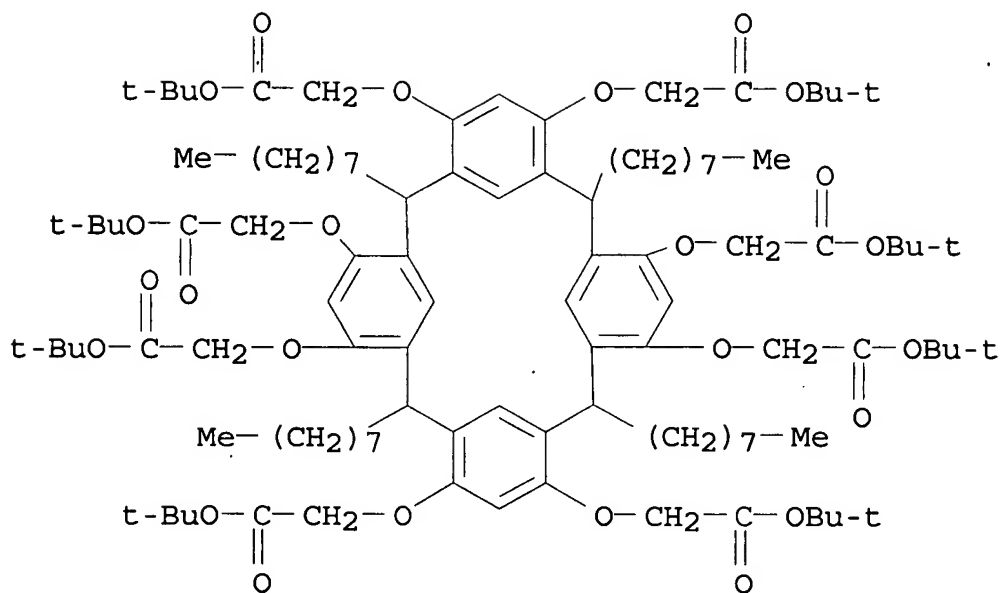
AB The compds. I (R1 = C1-18 alkyl, P; R2 = H, C1-15 alkoxy; m, p = 0-2; n = 4-12) and **resists** contg. I and radiation-sensitive acid generators are sep. claimed. The **resists** produce high-resoln. patterns for fabrication of integrated circuits.

IT 623159-05-7P 623159-06-8P 623159-07-9P  
623159-08-0P 623159-10-4P 623159-12-6P  
623159-13-7P 623159-14-8P 623159-15-9P

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

RN 623159-05-7 HCA

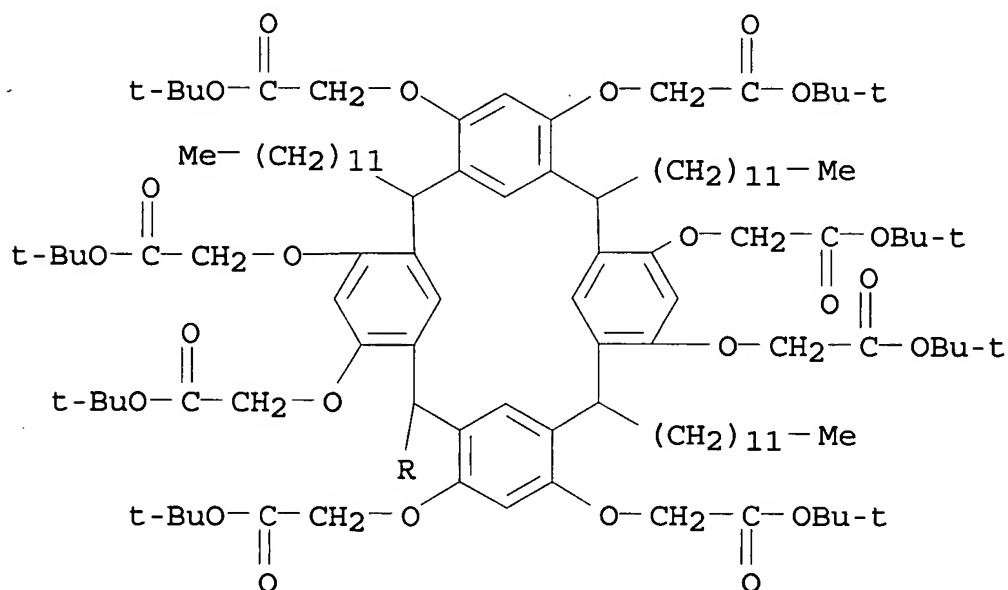
CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''',2''''''-[(2,8,14,20-tetraoctylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl)octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



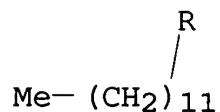
RN 623159-06-8 HCA

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PAGE 1-A

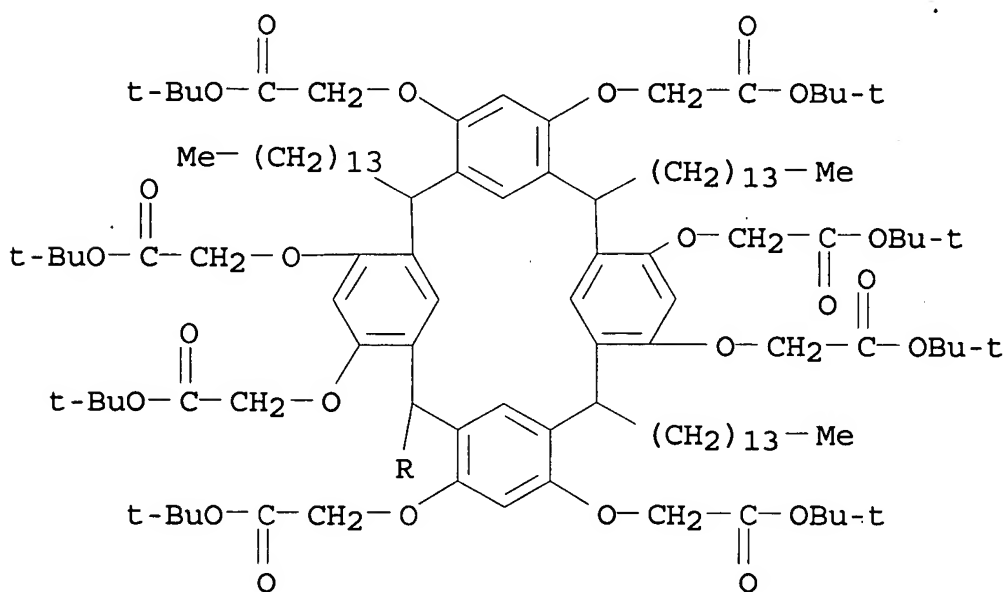


PAGE 2-A

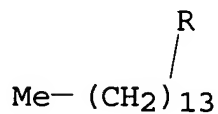


RN	623159-07-9	HCA
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PAGE 1-A



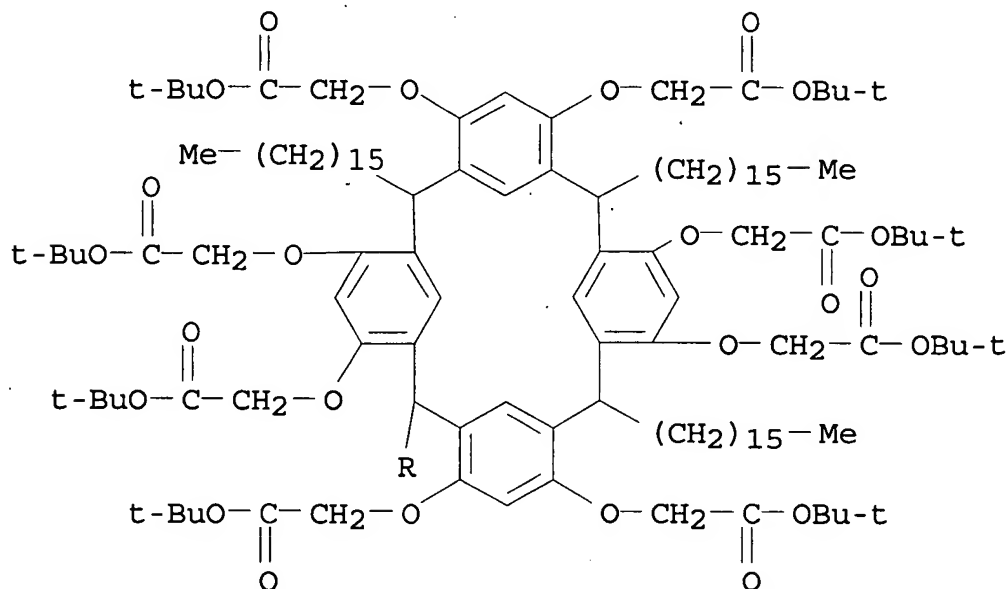
PAGE 2-A



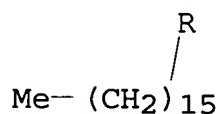
RN 623159-08-0 HCA  
CN Acetic acid, 2,2',2'',2''',2''''',2''''''',2''''''''',2'''''''''-[(2,8,14,20-

tetrahexadecylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-  
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-  
4,6,10,12,16,18,22,24-octayl)octakis(oxy)octakis-,  
octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

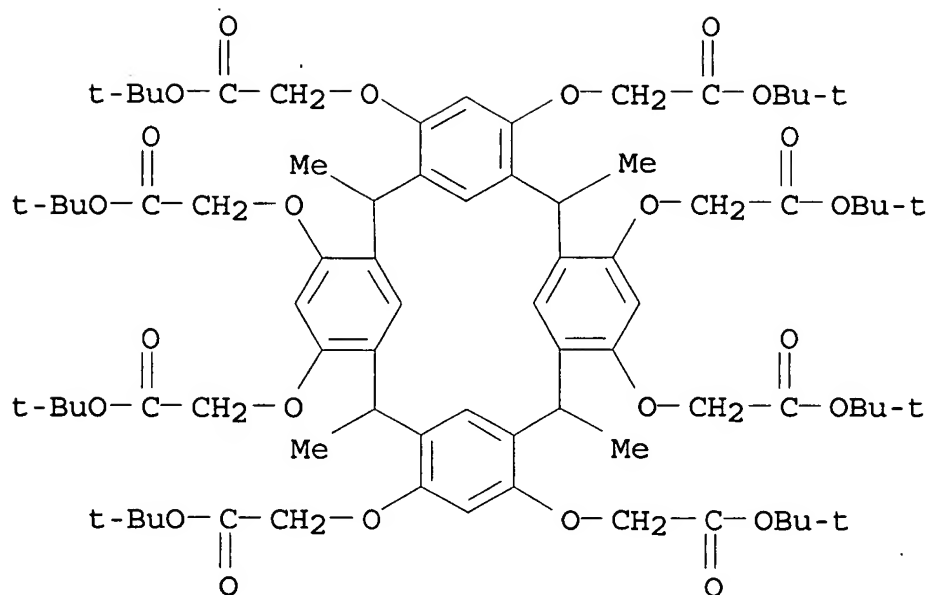
PAGE 1-A



PAGE 2-A



RN 623159-10-4 HCA  
CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''',2''''''-[(2,8,14,20-  
tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-  
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-  
4,6,10,12,16,18,22,24-octayl)octakis(oxy)octakis-,  
octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

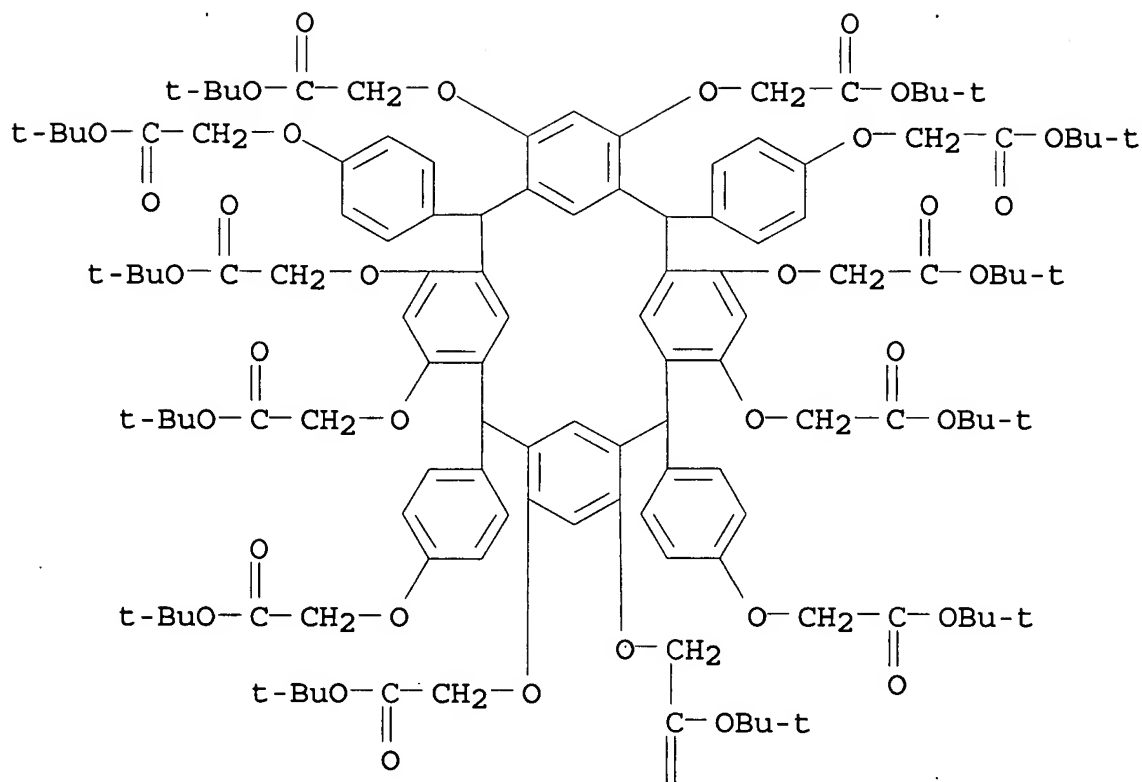


RN 623159-12-6 HCA

CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''''',2'''''''''-[[2,8,14,20-tetrakis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



PAGE 1-A

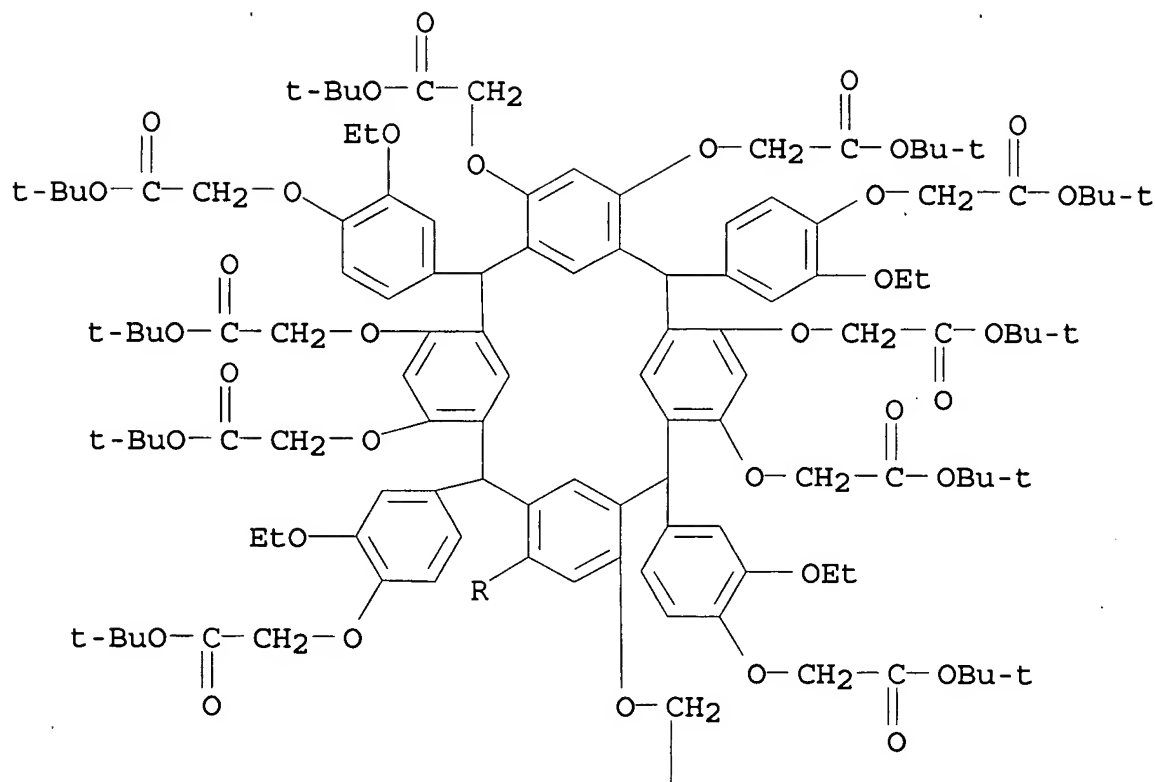


PAGE 2-A

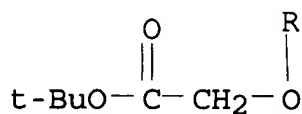
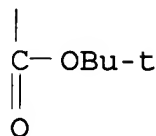


RN	623159-13-7 HCA
CN	Acetic acid, 2,2',2'',2''',2'''',2''''',2''''',2'''''''-[[2,8,14,20-tetrakis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-3-ethoxyphenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaen-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

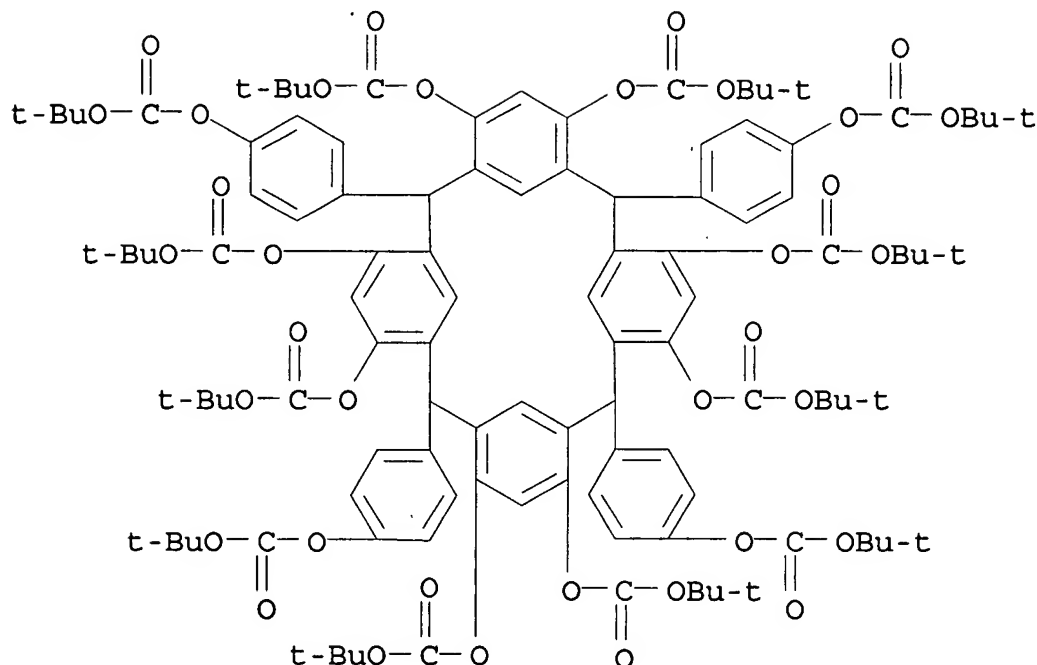


PAGE 2-A



RN 623159-14-8 HCA  
 CN Carbonic acid, 2,8,14,20-tetrakis[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI)

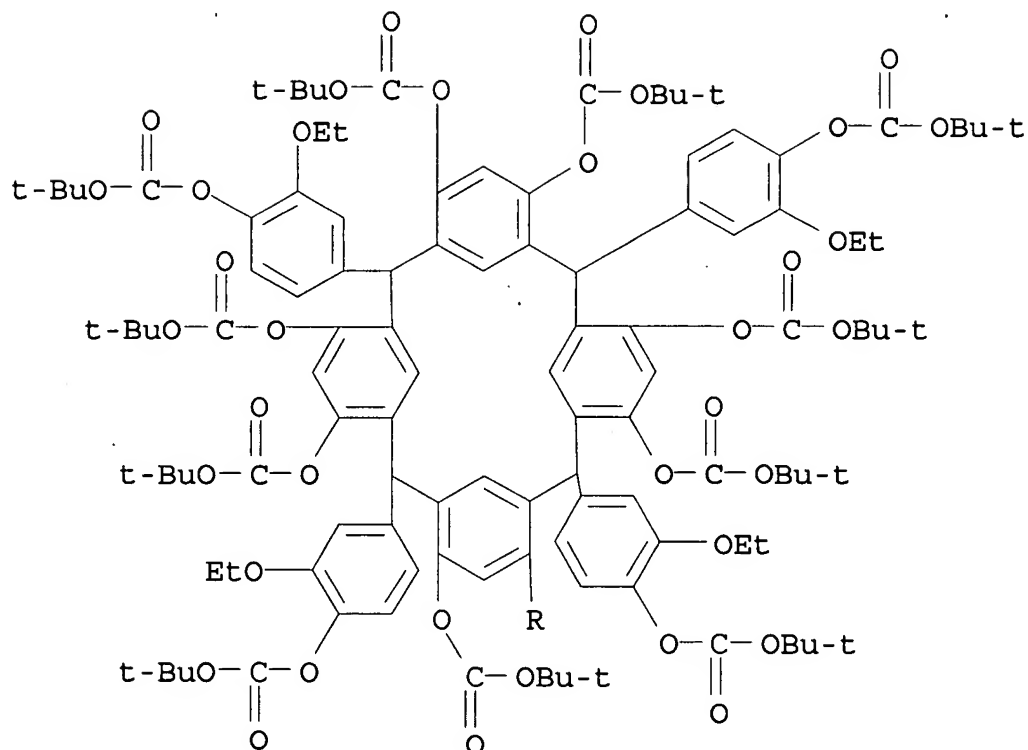
(CA INDEX NAME)



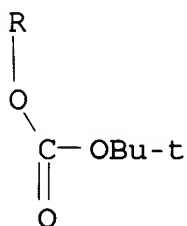
RN 623159-15-9 HCA

CN Carbonic acid, 2,8,14,20-tetrakis[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]-3-ethoxyphenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07C069-712  
 ICS C08G061-02; G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 25  
 ST butoxycarbonylalkoxy calixresorcinarene chem amplified pos  
**photoresist**; radiation sensitive **resist**  
 butoxycarbonylalkoxy calixresorcinarene solvent soly  
 IT Metacyclophanes

(calixarenes; tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

IT **Resists**

(radiation-sensitive; tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

IT **Positive photoresists**

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

IT 74227-35-3

(acid generators; tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

IT 65338-98-9P 176897-13-5P 182370-80-5P 203714-14-1P

623159-00-2P 623159-02-4P 623159-03-5P

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

IT 623159-05-7P 623159-06-8P 623159-07-9P

623159-08-0P 623159-10-4P 623159-12-6P

623159-13-7P 623159-14-8P 623159-15-9P

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

IT 108-46-3, Resorcinol, reactions 112-44-7, Undecanal 121-32-4, Ethylvanillin 123-08-0, p-Hydroxybenzaldehyde 123-63-7, 629-76-5, Pentadecanol 629-90-3, Heptadecanal 1454-85-9, 1-Heptadecanol 2765-11-9, Pentadecanal 5292-43-3, Tert-Butyl bromoacetate 10486-19-8, Tridecanal 24424-99-5, Di-tert-butyl dicarbonate

(tert-butoxycarbonylalkoxycalixresorcinarenes having high solvent soly. for liable pos.-working radiation-sensitive **resists**)

L70 ANSWER 3 OF 65 HCA COPYRIGHT 2007 ACS on STN

139:343473 Positive-working photosensitive composition containing polyamide and semiconductor device. Makabe, Hiroaki; Banba, Toshio; Hirano, Takashi (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003302761 A 20031024, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-105699 20020408.

AB The pos.-working photosensitive compn. comprises (A) a polyamide resin, (B) a photoacid, (C) a compd. protected by an acid unstable group, (D) a compd. capable of generating an acid in the presence of an acid, and (E) a solvent. Further, the compn. comprises a phenol compd. The compn. is applied on a semiconductor element so as to form a film with a thickness 0.1-30  $\mu\text{m}$  upon thermal

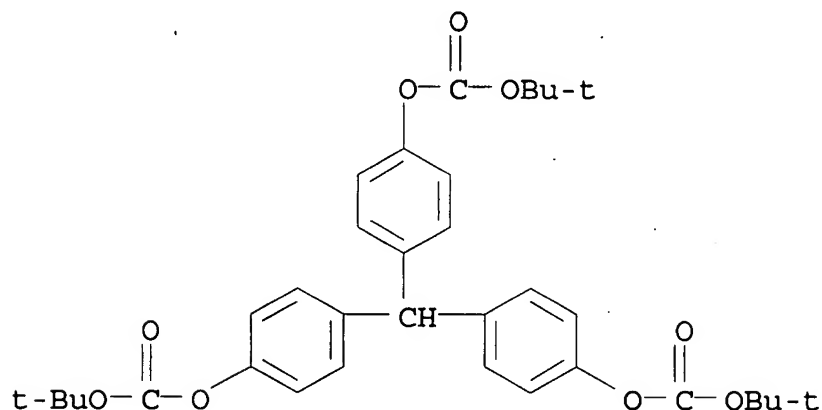
cyclodehydration.

IT 153041-55-5

(Pos.-working photosensitive compn. and semiconductor device)

RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

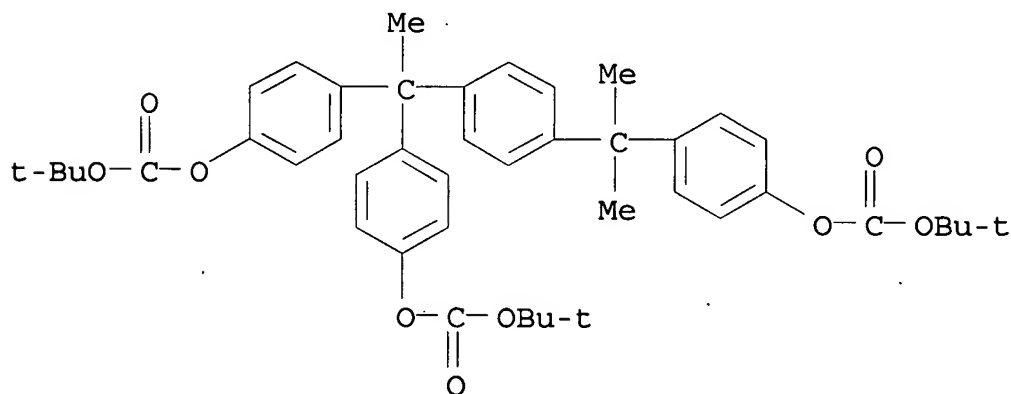


IT 151533-21-0

(pos.-working image-forming material having sp. peel strength)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C08F299-02; G03F007-004; G03F007-037; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

IT Photoimaging materials

**Photoresists**

Semiconductor devices

(pos.-working image-forming material having sp. peel strength)

IT 153041-55-5

(Pos.-working photosensitive compn. and semiconductor device)

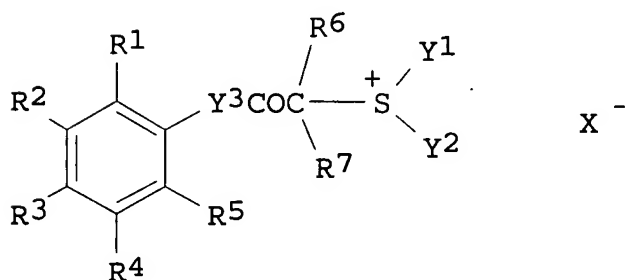
IT 7583-20-2 151533-21-0 591756-33-1

(pos.-working image-forming material having sp. peel strength)

L70 ANSWER 4 OF 65 HCA COPYRIGHT 2007 ACS on STN

138:145067 Positive radiation-sensitive compositions having high sensitivity and high resolution. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003035948 A 20030207, 51 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-141737 20020516. PRIORITY: JP 2001-148006 20010517.

GI



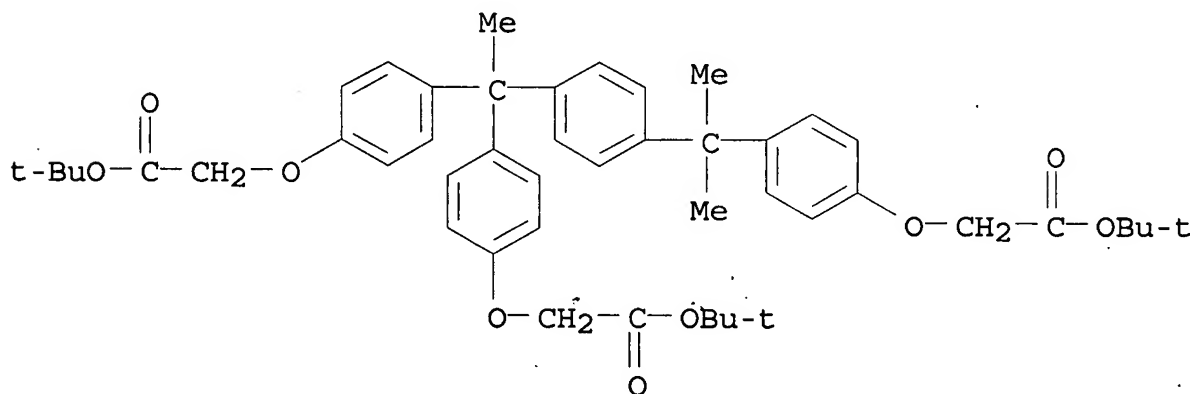
AB The compns. contain (A)  $\geq 1$  compds. generating acids by actinic ray (DUV, electron beam, x-ray, ionic ray) irradiation and represented by general formula I ( $R_1$ - $R_5$  = H, alkyl, alkoxy,  $\text{NO}_2$ , halo, alkoxy carbonyl, aryl;  $\geq 2$  of  $R_1$ - $R_5$  may be bonded to each other and form ring structure;  $R_6$ ,  $R_7$  = H, alkyl, CN, aryl;  $Y_1$ ,  $Y_2$  = alkyl, aryl, aralkyl, hetero atom.-contg. arom. group;  $Y_1$  and  $Y_2$  may be bonded to each other and form ring;  $Y_3$  = single bond or divalent linking group;  $X^-$  = non-nucleophilic anion;  $\geq 1$  of  $R_1$ - $R_5$  and  $Y_1$  and/or  $Y_2$  are bonded to each other and form ring or  $\geq 1$  of  $R_1$ - $R_5$  and  $R_6$  and/or  $R_7$  are bonded to each other and form ring; the compd. may bear  $\geq 2$  of the structure I by bonding via a linking group at desired positions selected from  $R_1$ - $R_7$  or  $Y_1$  or  $Y_2$ ) and (B) resins bearing groups which can be decomposed by acids and increase solubility in alkali developers. In another alternative, the compns. contain A, (C) low mol.-wt. dissolution inhibitors with mol. wt.  $\leq 3000$  and bearing groups which can be decomposed by acids and increase solubility in alkali developers, and (D) resins which are insoluble in water and soluble in alkali developers. The compns. are useful for fabrication of lithographic plates, IC, circuit boards for liquid crystals and thermal heads, etc.

IT 153698-54-5

(dissoln. inhibitor; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos DUV **resist** photoacid generator; thioanisole  
 chloroacetic acid chloride reaction photoacid generator; deep UV  
**resist** pos photoacid generator; radiation sensitive  
**resist** pos photoacid generator; cyclic ketone silyl enol  
 ether sulfoxide reaction; electron beam **resist** pos  
 photoacid generator; chem amplified **resist** pos photoacid  
 generator; tetralon enol silyl ether sulfoxide reaction

IT Positive **photoresists**

(UV; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

IT Positive **photoresists**

(chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

IT Electron beam **resists**

(pos.-working; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)

IT 153698-54-5 153698-63-6 153698-65-8 359434-70-1  
 359434-73-4

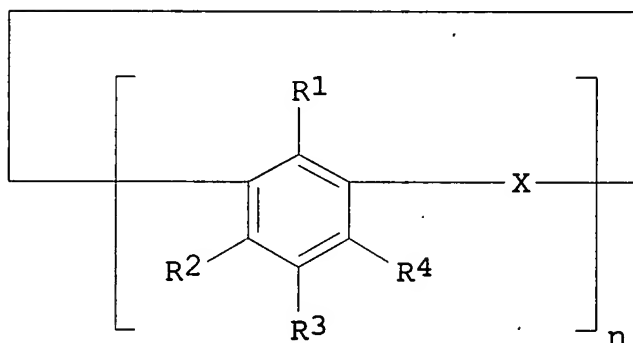
(dissoln. inhibitor; chem.-amplified pos. radiation-sensitive compns. having high sensitivity and high resoln.)



L70 ANSWER 5 OF 65 HCA COPYRIGHT 2007 ACS on STN

137:377437 Positive working radiation polymerizable compositions. Ueda, Mitsuru; Shibazaki, Yuji; Fujigaya, Takehiko; Kwon, Yong Gil (Jsr Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002328473 A 20021115, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-134962 20010502.

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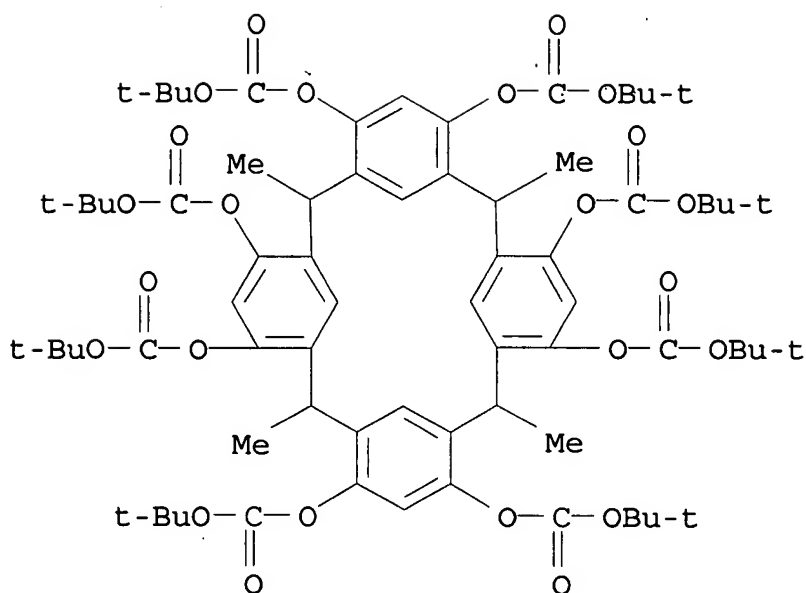
AB The compns. comprise (A) cyclic polyphenolic compds. I (R1-4 = H, OH, halo, alkyl, aryl, aralkyl, alkoxy, alkenyl, acyl, alkoxy carbonyl, alkyloxy, aryloxy, cyano, nitro;  $\geq 1$  of R1-4 is tert-butoxycarbonyloxy; X = direct bond, CR5R6; R5-6 = H, alkyl, aryl; n = integer of 3-8) and (B) radiation-sensitive acid generators. The compns. have high resolu. and high sensitivity.

IT 250715-31-2P

(calixarene-acid generator compns. for pos.-working photoresists)

RN 250715-31-2 HCA

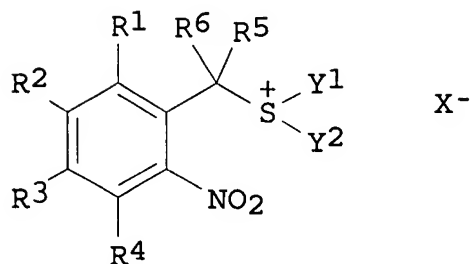
CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST methylcalixresorcinarene acid generator pos **photoresist**;  
calixarene acid generator compn pos **photoresist**
- IT **Positive photoresists**  
(calixarene-acid generator compns. for pos.-working **photoresists**)
- IT 65338-98-9DP, tert-butoxycarbonyl derivs. 65338-98-9P  
(calixarene-acid generator compns. for pos.-working **photoresists**)
- IT **250715-31-2P**  
(calixarene-acid generator compns. for pos.-working **photoresists**)
- IT 75-07-0, Acetaldehyde, reactions 108-46-3, Resorcinol, reactions 24424-99-5, Di-tert-butyl dicarbonate  
(calixarene-acid generator compns. for pos.-working **photoresists**)
- IT 137308-86-2, Diphenyliodonium 9,10-dimethoxyanthracene-2-sulfonate  
(radiation-sensitive acid generator; calixarene-acid generator compns. for pos.-working **photoresists**)
- L70 ANSWER 6 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 137:255340 Positive-working chemically amplification type radiation-sensitive **resist** composition with specified acid generator. Kodama, Kunihiro (Fuji Photo Film Co., Ltd., Japan).

Jpn. Kokai Tokkyo Koho JP 2002268209 A 20020918, 49 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-69053 20010312.

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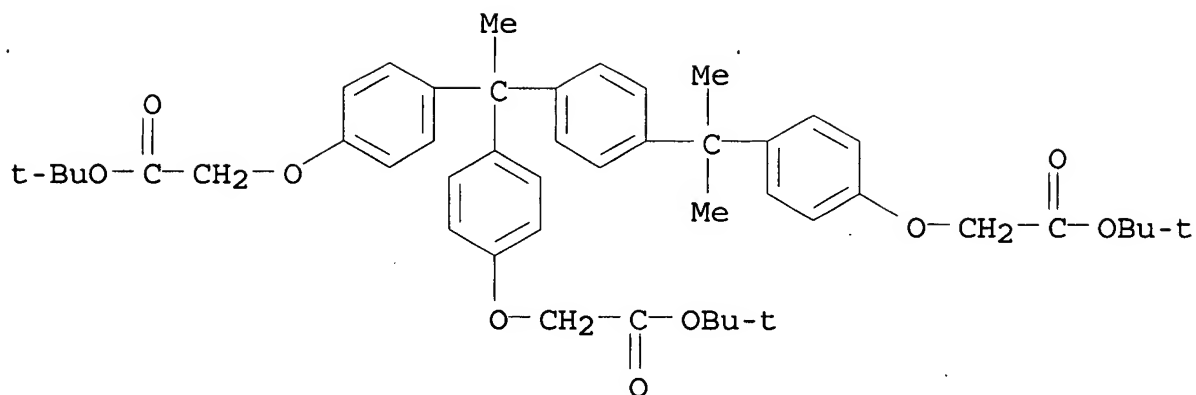


AB The invention relates to a pos.-working chem. amplification type radiation-sensitive **resist** compn. which comprises (A) a radiation-induced acid generator represented by I [R1-4 = H, alkyl, halogenated alkyl, alkoxy, nitro, alkoxy carbonyl, aryl, cyano; R5, R6 = H, alkyl, cyano, aryl; Y1, Y2 = alkyl, aryl, aralkyl; X- = non-nucleophilic anion], (B) an acid-decomposable, alk. developable resin, (C) an acid-decomposable, alk. developable resin with a mol. wt. of  $\leq 3000$ , (D) a water-insol., alk.-sol. resin, (E) an org. base compd., and (F) fluoro- and/or silicone-surfactants. The **resist** compn. shows higher resoln. and higher sensitivity to deep-UV and electron beams.

IT **153698-54-5**  
(in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004  
ICS G03F007-004; C08K005-00; C08K005-42; C08L101-02; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 76
- ST pos working chem amplification **photoresist** compn photoacid generator; electron beam **resist** compn pos working chem amplification
- IT **Positive photoresists**  
(chem. amplification; pos.-working chem. amplification type radiation-sensitive **resist** compn. with specified acid generator)
- IT **Electron beam resists**  
(pos.-working, chem. amplification; pos.-working chem. amplification type radiation-sensitive **resist** compn. with specified acid generator)
- IT **Polysiloxanes, uses**  
(surfactant in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resolu. to deep-UV and electron beam)
- IT 102-82-9, Tri-n-butylamine 484-47-9, 2,4,5-Triphenylimidazole 2052-49-5, Tetrabutylammoniumhydroxide 3001-72-7, 1,5-Diazabicyclo[4.3.0]-5-nonene 3040-44-6, 1-Piperidineethanol (base compd. in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resolu. to deep-UV and electron beam)
- IT 19600-49-8 24979-69-9, Poly(m-Hydroxystyrene) 24979-70-2, p-Hydroxystyrene homopolymer 24979-74-6, p-Hydroxystyrene-styrene copolymer 125325-82-8 129674-22-2 **153698-54-5**  
153698-63-6 153698-65-8 158593-28-3 159296-87-4 200808-68-0  
288620-13-3 288620-15-5 289706-85-0 325143-37-1 359434-70-1  
359434-73-4 359434-80-3 372968-15-5  
(in pos.-working chem. amplification type radiation-sensitive

**resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)

IT 66003-78-9 138529-81-4 138529-84-7 144089-15-6 153698-46-5  
258341-98-9 312386-77-9 376357-89-0 389859-76-1 461054-82-0  
(photoacid generator in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)

IT 130975-60-9 461054-57-9 461054-59-1 461054-60-4 461054-61-5  
461054-62-6 461054-63-7 461054-64-8 461054-65-9 461054-66-0  
461054-68-2 461054-70-6 461054-71-7 461054-73-9 461054-75-1  
461054-77-3 461054-78-4 461054-80-8  
(radiation-sensitive acid generator in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)

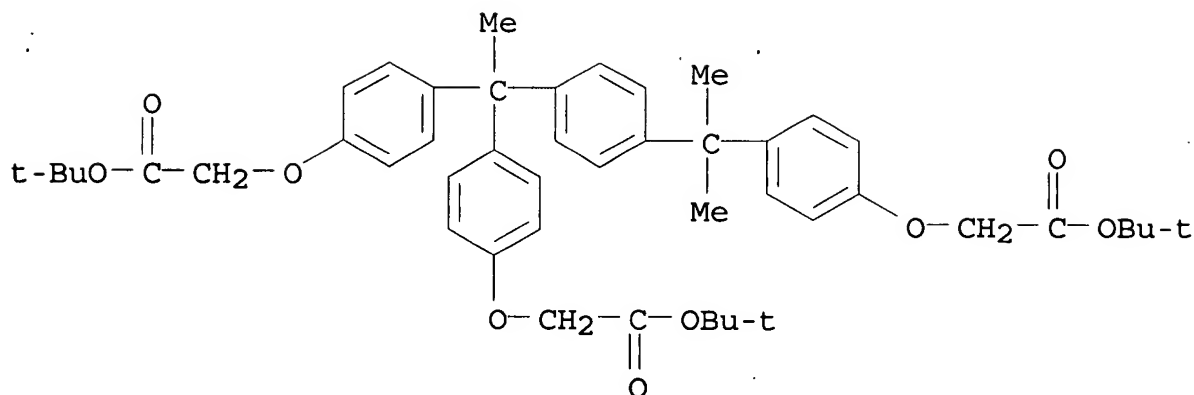
IT 137462-24-9, Megafac F 176 216679-67-3, Megafac R 08  
364039-09-8, Troysol S 336  
(surfactant in pos.-working chem. amplification type radiation-sensitive **resist** compn. showing higher sensitivity and higher resoln. to deep-UV and electron beam)

L70 ANSWER 7 OF 65 HCA COPYRIGHT 2007 ACS on STN  
137:177102 Positive-working **resist** composition for electron-beam and x-ray lithography used for semiconductor device fabrication. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002229193 A 20020814, 80 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-29752 20010206.

AB The pos.-working **resist** compn. comprises (a) a compd. having a disulfone group, (b) a low mol. wt. dissoln. inhibitor with a mol. wt.  $\leq 3,000$  which increases its soly. upon decompn. by an acid, and (c) an alk. sol. resin. The compd. having the disulfone group is represented by R1-SO2-SO2-R2 (R1,2 = methyl, alkyl, cycloalkyl, aralkyl). The pos.-working **resist** compn. exhibited high sensitivity and excellent pattern resoln. even under high acceleration voltage conditions.

IT 153698-54-5  
(dissoln. inhibitor; pos.-working **resist** compn. for electron-beam and x-ray lithog.)

RN 153698-54-5 HCA  
CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004  
ICS G03F007-004; C08F012-14; C08K005-00; C08K005-41; C08L101-00; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35, 38, 76
- ST **resist** compn electron beam x ray lithog; photoacid alk sol  
resin dissoln inhibitor **resist** compn
- IT Electron beam lithography  
X-ray lithography  
(pos.-working **resist** compn. for electron-beam and x-ray lithog.)
- IT 105649-65-8P, 3-t-Butoxystyrene homopolymer 155168-25-5P  
406685-56-1P 406685-57-2P 425422-24-8P, 4-t-Butoxystyrene-3,4-dimethoxystyrene copolymer  
(alk. sol. resin; pos.-working **resist** compn. for electron-beam and x-ray lithog.)
- IT 24979-70-2, VP-8000  
(alk. sol. resin; pos.-working **resist** compn. for electron-beam and x-ray lithog.)
- IT 153698-63-6P 153698-65-8P  
(dissoln. inhibitor; pos.-working **resist** compn. for electron-beam and x-ray lithog.)
- IT 153698-54-5 153698-58-9 162744-66-3 438491-43-1  
(dissoln. inhibitor; pos.-working **resist** compn. for electron-beam and x-ray lithog.)
- IT 10409-07-1 22040-25-1 91222-48-9 91222-53-6 153698-66-9  
194712-93-1 426832-92-0 446301-57-1  
(photoacid; pos.-working **resist** compn. for electron-beam and x-ray lithog.)
- IT 76937-83-2,  $\alpha, \alpha, \alpha', \alpha', \alpha'', \alpha''$ -  
Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 148452-55-5,  
1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane

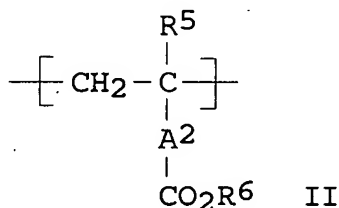
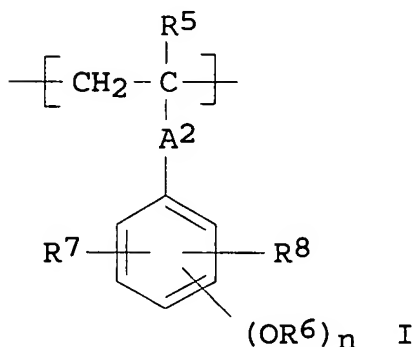
(pos.-working **resist** compn. for electron-beam and x-ray lithog.)

IT 24979-69-9, Poly3-Hydroxystyrene 128761-29-5 149614-53-9,  
3-Hydroxystyrene-4-hydroxystyrene copolymer 173786-70-4  
321164-59-4 345212-27-3 345212-60-4 420131-94-8 446301-59-3  
(resin; pos.-working **resist** compn. for electron-beam  
and x-ray lithog.)

L70 ANSWER 8 OF 65 HCA COPYRIGHT 2007 ACS on STN

137:54627 Electron-beam or x-ray positive-working **resists**  
showing high sensitivity and resolution, and enhanced pattern  
profiles. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn.  
Kokai Tokkyo Koho JP 2002182392 A 20020626, 56 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-376059 20001211.

GI



AB The pos. **resist** compns. contain (A) resins having  
repeating units I and/or II [R5 = H, halogen, CN, (substituted)  
alkyl, haloalkyl; OR6, CO2R6 = acid-decomp., alkali-sol. group; R7,  
R8 = H, OH, halogen, CN, (substituted) alkoxy, acyl, alkyl,  
cycloalkyl, alkenyl, aralkyl, aryl; A2 = single bond, (substituted)  
divalent alkynylene, alkenylene, cycloalkylene, arylene, OCOR9,  
COOR10, CONR11R12; R9, R10, R12 = single bond, divalent alkylene,  
alkenylene, cycloalkylene, or arylene which may have ether, ester,  
amide, urethane, ureido and may be substituted; R11 = H,  
(substituted) alkyl, cycloalkyl, aralkyl, aryl; n = 1-3 integer; R6,  
R6 and R7 or R8, or R7 and R8 may be bonded together] and (B)  
disulfonic acid group-contg. compds.

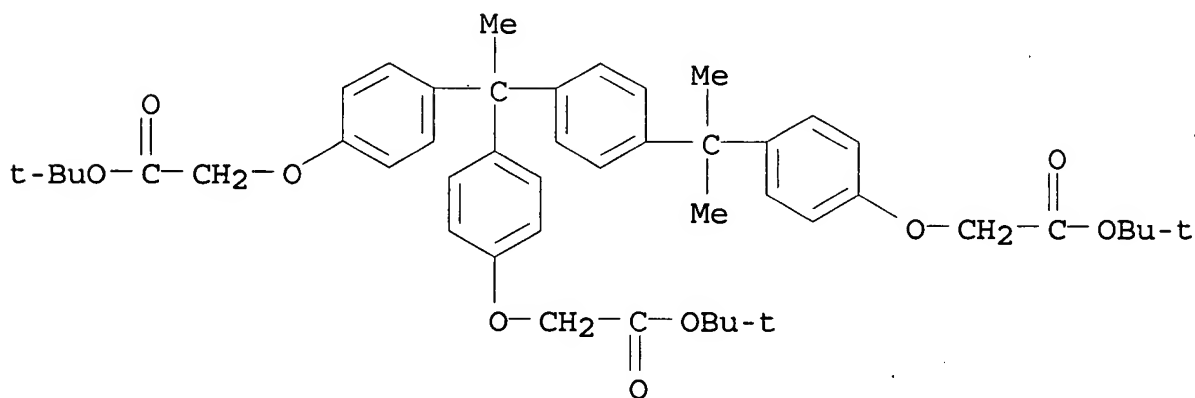
IT 153698-54-5

(dissoln. inhibitor; electron-beam or x-ray pos.-working  
**resists** showing high sensitivity and resoln., and  
enhanced pattern profiles)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-

oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS C07C381-00; C08K005-41; C08L101-12; G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST electron beam pos **resist** styrene polymer; x ray pos **resist** styrene polymer; disulfonic acid photoacid generator pos **resist**
- IT Electron beam **resists**  
X-ray **resists**  
(pos.-working; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resolu., and enhanced pattern profiles)
- IT 153698-54-5 153698-63-6  
(dissoln. inhibitor; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resolu., and enhanced pattern profiles)
- IT 109-92-2DP, Ethyl vinyl ether, reaction products with poly(p-hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction products with Et vinyl ether 158593-28-3P 200808-68-0P 438535-75-2DP, hydrolyzed 438535-77-4P 438535-78-5P 438535-80-9P 438535-82-1P 438535-83-2P 438535-84-3P 438535-85-4P 438535-86-5P 438535-87-6P 438535-88-7P  
(electron-beam or x-ray pos.-working **resists** showing high sensitivity and resolu., and enhanced pattern profiles)
- IT 1886-74-4 10409-07-1 13603-79-7 58113-98-7 91222-48-9 91222-53-6 124737-97-9 124738-06-3 194712-93-1 426832-92-0  
(photoacid generator; electron-beam or x-ray pos.-working **resists** showing high sensitivity and resolu., and enhanced pattern profiles)



137:54610 Positive **resist** composition sensitive to electron beam or X-ray. Aogo, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002174894 A **20020621**, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-372986 20001207.

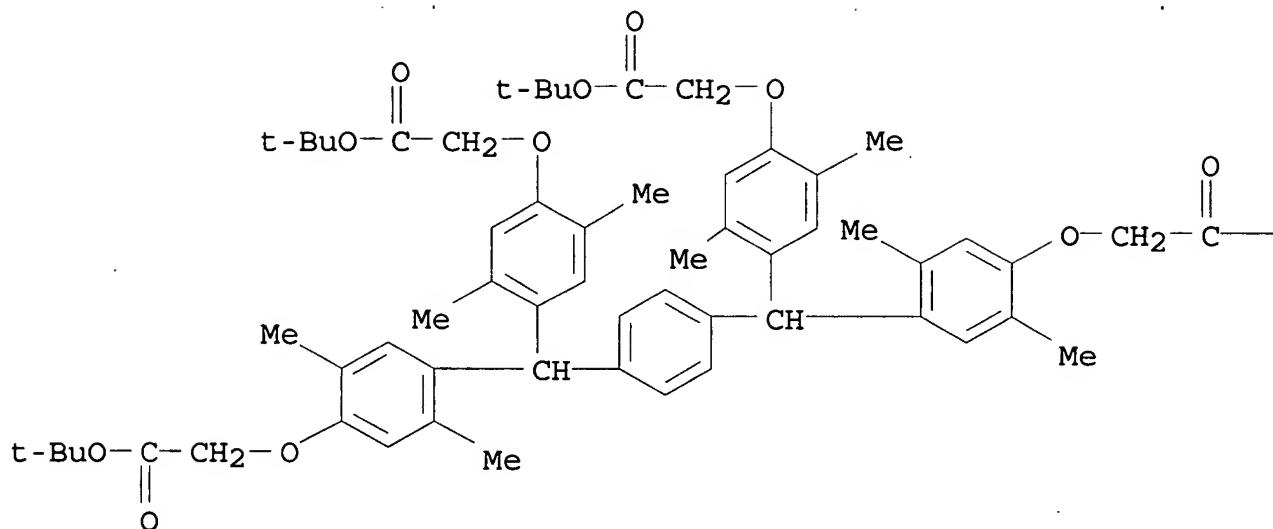
IT 153698-54-5 177983-92-5

RN 153698-54-5 HCA

CC(C)(C)OC(=O)COC(=O)c1ccc(cc1)C(C)(C)c2ccc(cc2)C(C)(C)c3ccc(cc3)COC(=O)COC(C)(C)C

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methyldiynabis[(2,5-dimethyl-4,1-phenylene)oxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— OBU-t

- IC ICM G03F007-004  
ICS G03F007-004; C08K005-00; C08L057-10; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST sensitivity resolu pos **resist** electron beam X ray
- IT Positive **photoresists**  
(electron beam- or X-ray-sensitive pos. **resist** compn. with high resolu. and sensitivity)
- IT **Resists**  
(pos.-working; electron beam- or X-ray-sensitive pos. **resist** compn. with high resolu. and sensitivity)
- IT 153698-54-5 153698-58-9 153698-63-6 153698-65-8  
177983-92-5 438491-43-1  
(dissoln.-inhibiting compd.; electron beam- or X-ray-sensitive pos. **resist** compn. with high resolu. and sensitivity)

IT 403656-00-8P 403656-01-9P 403656-03-1P 438491-35-1P  
 438491-38-4P 438491-39-5P 438491-40-8P 438491-41-9P  
 438491-42-0P

(electron beam- or X-ray-sensitive pos. **resist** compn.  
 with high resoln. and sensitivity)

L70 ANSWER 10 OF 65 HCA COPYRIGHT 2007 ACS on STN

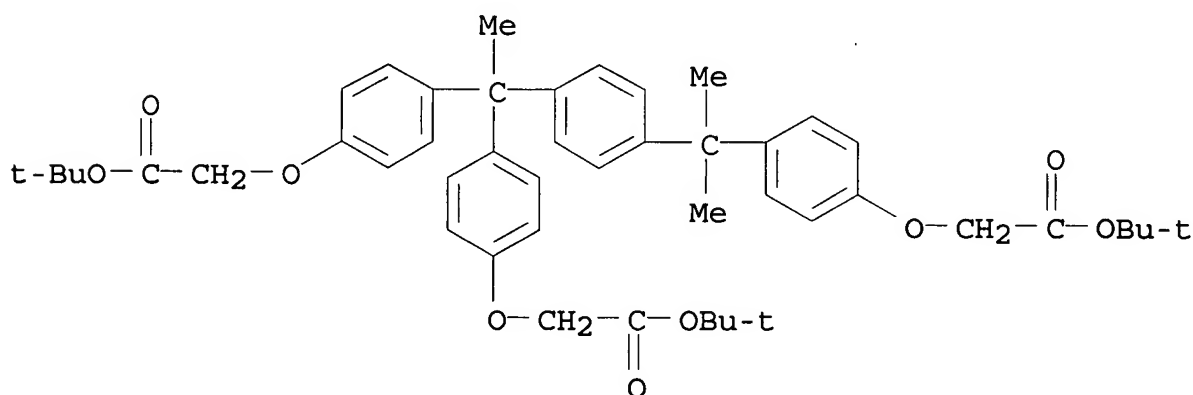
136:348304 Positive photosensitive composition. Kodama, Kunihiro; Aoai, Toshiaki (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1199603 A1 **20020424**, 148 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2001-124329 20011019. PRIORITY: JP 2000-321128 20001020; JP 2000-352899 20001120; JP 2001-132546 20010427.

AB A pos. photosensitive compn. comprises a compd. capable of generating a specified sulfonic acid upon irradiation with one of an actinic ray and radiation and a resin capable of decomposing under the action of an acid to increase the solubility in an alkali developer.

IT **153698-54-5**  
 (photo-acid generator used in pos. **photoresist** compn.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC' ICM G03F007-004

ICS G03F007-039; C07C309-06; C07C381-12

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST pos **photoresist** photo acid generator photodecomposable resin; sulfonium salt iodonium salt

IT Onium compounds

(iodonium; photo-acid generator used in pos. **photoresist** compn.)

IT Sulfonium compounds  
(photo-acid generator used in pos. **photoresist** compn.)

IT Positive **photoresists**  
(pos. **photoresist** compn. contg. novel photo-acid generators and photo-decomposable resins)

IT 398141-17-8P 414911-27-6P  
(photo-acid generator used in pos. **photoresist** compn.)

IT 19600-49-8 24979-69-9, Poly(m-Hydroxystyrene) 24979-74-6,  
p-Hydroxystyrene-styrene copolymer 66003-78-9 133710-62-0  
138529-81-4 144317-44-2 **153698-54-5** 153698-63-6  
153698-65-8 177034-80-9 195000-67-0 195154-83-7 197447-16-8  
216308-45-1 241806-75-7 250378-10-0 258341-98-9 258872-05-8  
258879-87-7 260448-02-0 288303-55-9 297156-40-2 301153-77-5  
301664-71-1 304441-22-3 324770-96-9 357413-69-5 357413-71-9  
359434-70-1 359434-73-4 376357-89-0 389859-76-1 398141-18-9  
398141-19-0 414911-28-7 414911-29-8 414911-31-2 414911-32-3  
414911-33-4 414911-34-5 414911-35-6 414911-36-7 414911-37-8  
414911-39-0 414911-40-3 414911-42-5 414911-43-6 414911-45-8  
414911-47-0 414911-48-1 414911-50-5 414911-51-6 414911-52-7  
414911-54-9 414911-56-1 414911-58-3 414911-60-7 414911-63-0  
414911-65-2 414911-67-4 414911-69-6 414911-71-0 414911-73-2  
414911-75-4 414911-76-5 414911-77-6 414911-79-8 414911-81-2  
414911-82-3 414911-83-4 414911-85-6 414911-86-7 414911-87-8  
414911-88-9 415916-79-9 415916-81-3 415916-83-5 415916-84-6  
415920-53-5 415920-54-6  
(photo-acid generator used in pos. **photoresist** compn.)

IT 200808-68-0P, Styrene-p-hydroxystyrene-tert-butyl acrylate copolymer  
(photo-decomposable resin in pos. **photoresist** compn.)

IT 177080-68-1  
(photo-decomposable resin in pos. **photoresist** compn.)

IT 24979-70-2DP, Poly(p-hydroxystyrene), ester or ether derivs.  
159296-87-4DP, p-Vinylphenol-tert-butyl acrylate copolymer, reaction  
products with iso-Bu vinyl ether 159296-87-4P  
(photo-decomposable resin used in pos. **photoresist** compn.)

IT 108-24-7, Acetic anhydride 109-53-5, Isobutyl vinyl ether  
4442-79-9, Cyclohexane ethanol 24424-99-5, Di-tert-butyl  
dicarbonate  
(reagent used in prepg. photo-decomposable resin used in pos.  
**photoresist** compn.)

IT 24979-70-2, VP 8000  
(starting material for prepg. photo-decomposable resin used in  
pos. **photoresist** compn.)

IT 3744-08-9 111329-06-7 113507-82-7  
(starting material for synthesizing photo-acid generator used in  
pos. **photoresist** compn.)

L70 ANSWER 11 OF 65 HCA COPYRIGHT 2007 ACS on STN

136:270357 A positive-working alkaline developable **photoresist** based on partially tert-Boc-protected calix[4]resorcinarene and a photoacid generator. Young-Gil, Kwon; Kim, Jin Baek; Fujigaya, Tsuyohiko; Shibasaki, Yuji; Ueda, Mitsuru (Department of Chemistry, Korea Advanced Institute of Science & Technology, Yusong-ku, Taejeon, 305-701, S. Korea). Journal of Materials Chemistry, 12(1), 53-57 (English) 2002. CODEN: JMACEP. ISSN: 0959-9428.

Publisher: Royal Society of Chemistry.

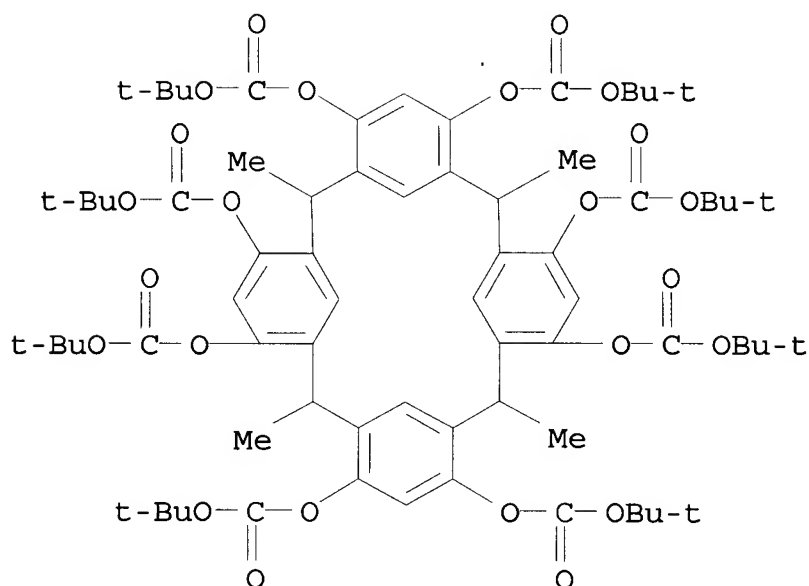
AB A pos. working low-mol.-wt. **photoresist** based on partially t-Boc protected tetra-C-methylcalix[4]resorcinarene (t-Boc C-4-R) and a photoacid generator (PAG), diphenyliodonium 9,10-dimethoxyanthracene-2-sulfonate (DIAS) was developed. t-Boc C-4-Rs were prepd. by the reaction of C-4-R with di-CMe<sub>3</sub> dicarbonate in the presence of 4-dimethylaminopyridine (DMAP). A clear film cast from a 20% t-Boc C-4-R soln. in cyclohexanone showed high transparency to UV >300 nm. The appropriate t-Boc protecting ratio was .apprx.60 mol% in view of adhesion, deprotection temp. and dissoln. rate. The **photoresist** consisting of 60 mol% t-Boc C-4-R (95%) and DIAS (5%) showed a sensitivity of 13 mJ cm<sup>-2</sup> and a contrast of 12.6 when it was exposed to 365 nm light and post-baked at 105° for 90 s, followed by developing with a 2.38% aq. Me<sub>4</sub>NOH (TMAH) soln. at room temp. A fine pos. image featuring 1.5 µm of min. line and space patterns was obsd. on the film of the **photoresist** exposed to 40 mJ cm<sup>-2</sup> of UV-light at 365 nm by the contact mode.

IT 250715-31-2P

(pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)

RN 250715-31-2 HCA

CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacosa-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos working **photoresist** butoxycarbonyl protected calixarene photoacid generator
- IT Dissolution
- Positive **photoresists**  
 (pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 75-07-0, Acetaldehyde, reactions 77-78-1 108-46-3, 1,3-Benzenediol, reactions 1122-58-3 1483-72-3 16106-40-4 34619-03-9 67580-39-6  
 (pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 75-59-2P 65338-98-9P **250715-31-2P**  
 (pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 999-97-3  
 (silicon wafer coated with; pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)
- IT 405263-63-0  
 (silicon wafer coated with; pos.-working alk. developable **photoresist** based on partially BOC-protected calix[4]resorcinarene and photoacid generator)

L70 ANSWER 12 OF 65 HCA COPYRIGHT 2007 ACS on STN

135:84299 Positive-working **photoresist** compositions comprising alkaline-soluble silsesquioxanes. Mizutani, Kazuyoshi; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001174998 A 20010629, 45 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1999-354710 19991214.

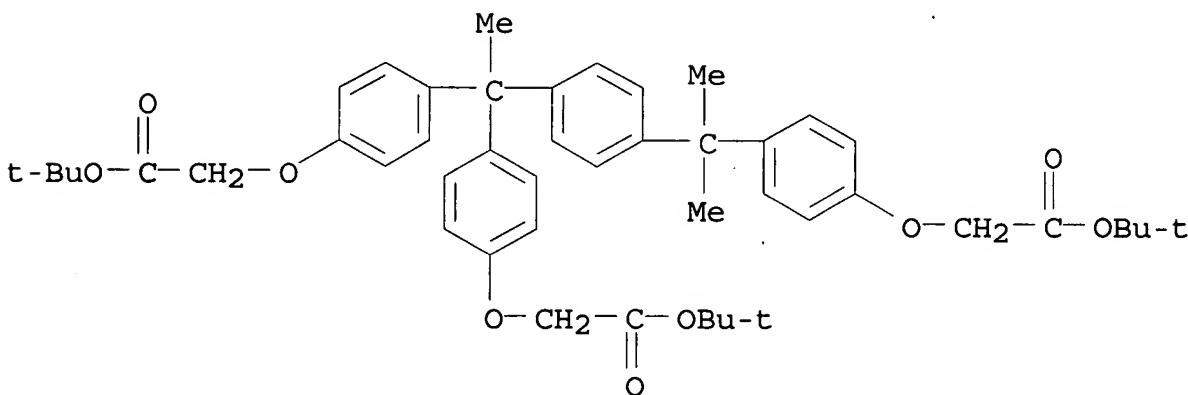
AB The compns. contain silsesquioxanes having structural repeating unit  $[\text{Si}(\text{LXZ})\text{O}_3/2]$  (L = ANHCO, ANHCO<sub>2</sub>, ANHCONH; A = single bond, alkylene, arylene; X = single bond, bivalent bond; Z = C<sub>6</sub>H<sub>5</sub>-1(OH)1, CY<sub>3</sub>-m[C<sub>6</sub>H<sub>5</sub>-1(OH)1,]m; Y = H, linear, branched, or cyclic alkyl, aryl, or aralkyl; 1, m = integer of 1-3). Also claimed are pos. **photoresist** compns. contg. (a) the above stated silsesquioxanes, (b) photoacid generators, and (c1) phenolic compds. which their phenolic OH groups are completely protected with acid-decomp. groups or (c2) arom. or aliph. carboxylic acids which their carboxyl groups are completely protected with acid-decomp. groups. The compns. have high sensitivity and high resolu. and are esp. suitable for use as upper-layer **resists** in bilayered **resists** used for fabrication of semiconductor devices, liq. crystal displays, etc.

IT 153698-54-5

(pos.-working **photoresist** compns. comprising alk.-sol. amide group-contg. silsesquioxanes)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-075

ICS C08L083-08; G03F007-039; H01L021-027; H05K003-06

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38

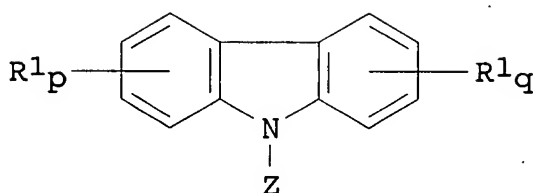
- ST silsesquioxane pos **photoresist** high resolu sensitivity;  
amide contg silsesquioxane pos **photoresist**
- IT Silsesquioxanes  
(amide group-contg.; pos.-working **photoresist** compns.  
comprising alk.-sol. amide group-contg. silsesquioxanes)
- IT Positive **photoresists**  
(pos.-working **photoresist** compns. comprising alk.-sol.  
amide group-contg. silsesquioxanes)
- IT 153698-46-5, Triphenylsulfonium pentafluorophenylsulfonate  
197447-16-8, Triphenylsulfonium 2,4,6-triisopropylphenylsulfonate  
335385-79-0 346702-86-1  
(acid generator; pos.-working **photoresist** compns.  
comprising alk.-sol. amide group-contg. silsesquioxanes)
- IT 153698-54-5 153698-63-6 199432-82-1 346702-85-0  
(pos.-working **photoresist** compns. comprising alk.-sol.  
amide group-contg. silsesquioxanes)
- IT 126-00-1DP, Diphenolic acid, reaction products with silsesquioxanes  
156-38-7DP, 4-Hydroxyphenylacetic acid, reaction products with  
aminopropyltrimethoxysilane-chloromethyltrimethoxysilane copolymer  
54115-51-4DP, 3-Aminopropyltrimethoxysilane homopolymer, reaction  
product with diphenolic acid 161376-90-5DP, reaction product with  
diphenolic acid 346702-97-4DP, reaction product with diphenolic  
acid and hydroxyphenylacetic acid  
(pos.-working **photoresist** compns. comprising alk.-sol.  
amide group-contg. silsesquioxanes)
- IT 346702-87-2 346702-89-4 346702-91-8 346702-93-0 346702-95-2  
(pos.-working **photoresist** compns. comprising alk.-sol.  
amide group-contg. silsesquioxanes)

L70 ANSWER 13 OF 65 HCA COPYRIGHT 2007 ACS on STN

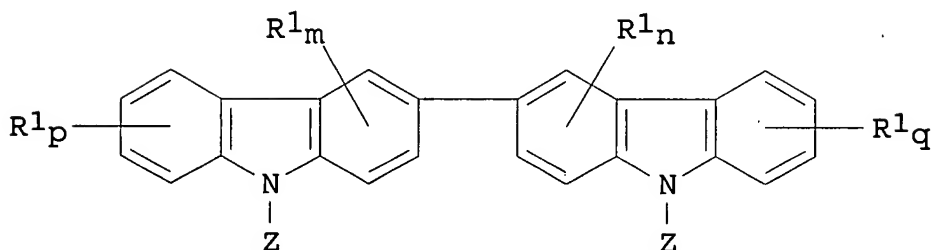
134:318666 Positive-working radiation sensitive resin composition.  
Kobayashi, Eiichi; Miyamoto, Masahiro; Iwanaga, Shinichiro; Chen,  
Yang Hung (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2001109142A 20010420, 21 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1999-290249 19991012.

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II

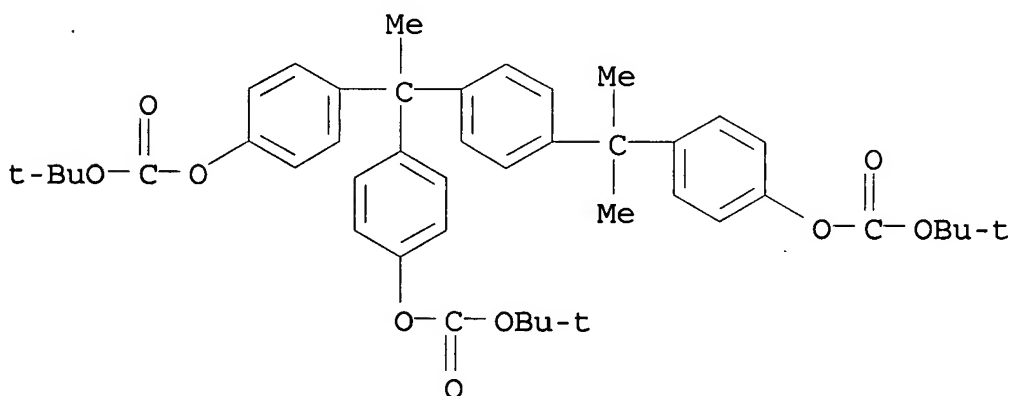
AB The pos.-working radiation sensitive resin compn. comprises (A) a radiation-sensitive acid-generating agent, (B) a carbazole as a sensitizing agent represented by I or II ( $R^1$  = halo, OH, mercapto, etc.;  $p, q = 0-4$ ;  $m, n = 0-2$ ;  $Z$  = C1-18 monovalent org. group), (C) (i) alk.-insol. or hardly sol. resin which is protected by an acid decompn. group and becomes alk. sol. upon dissocn. of the acid decompn. group or (ii) an alk. sol. resin and an alk. soly.-controlling agent, and (D) a crosslinking agent. A fine pattern is formed from this resin compn. by UV to far-UV region.

IT 151533-21-0

(pos.-working radiation sensitive resin compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

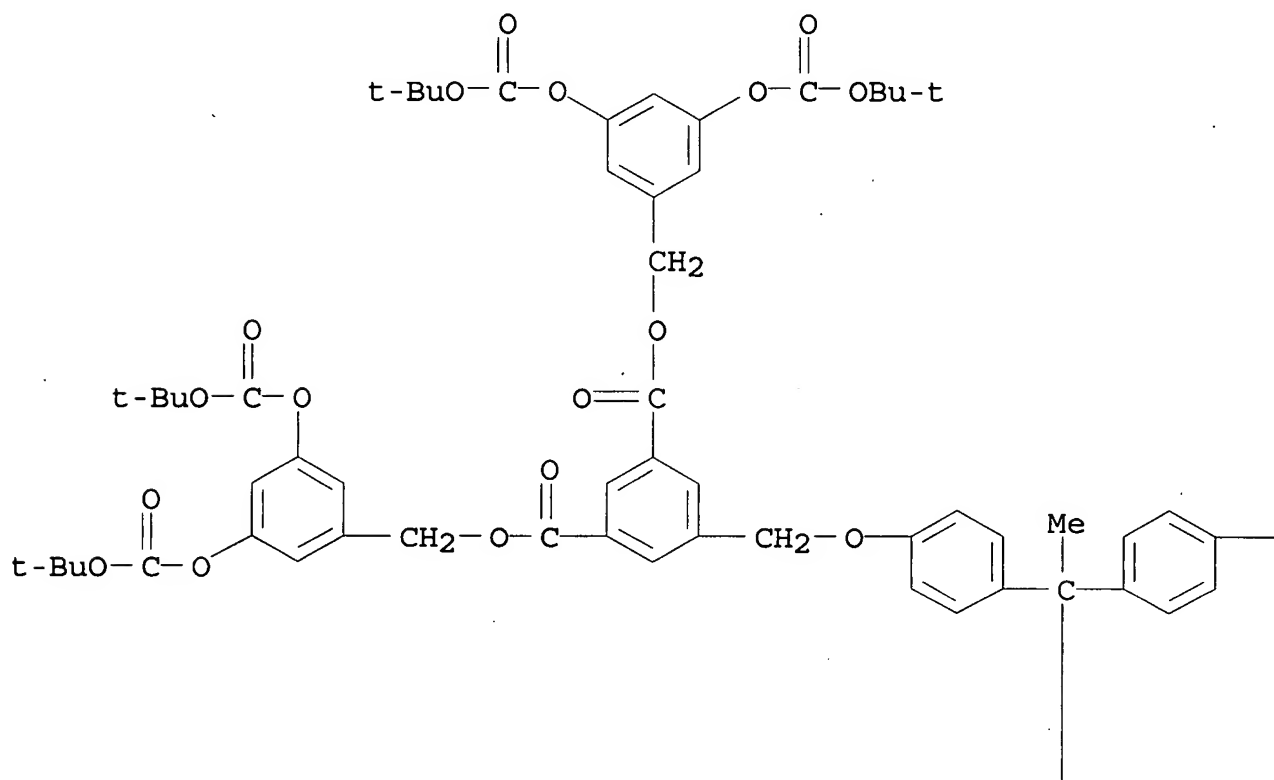


- IC ICM G03F007-004  
ICS G03F007-004; C08K005-00; C08K005-3417; C08K005-36; C08L101-00;  
G03F007-039; H01L021-027
- CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 35, 38, 76
- ST carbazole sensitizer radiation sensitive resin compn  
**photoresist**
- IT **Photoresists**  
(pos.-working radiation sensitive resin compn. for)
- IT 86-28-2, N-Ethylcarbazole 20466-00-6, 9,9'-Diethyl-3,3'-  
dicarbazole 24979-70-2, Poly(p-hydroxystyrene) 24979-70-2D,  
Poly(p-hydroxystyrene), deriv. 24979-74-6, p-Hydroxystyrene-  
styrene copolymer 57103-09-0, N-Ethyl-3,6-bis(benzoyl)carbazole  
117458-06-7 121091-20-1, 1,4,5,8,9-Pentamethylcarbazole  
151533-21-0 200808-68-0, tert-Butyl acrylate-p-  
hydroxystyrene-styrene copolymer  
(pos.-working radiation sensitive resin compn.)
- L70 ANSWER 14 OF 65 HCA COPYRIGHT 2007 ACS on STN.
- 134:214835 Dendrimer-based chemically amplified **resists** for  
sub-100-nm lithography. Tully, David C.; Trimble, Alexander R.;  
Frechet, Jean M. J. (Dep. Chem., Univ. of California, Berkeley, CA,  
USA). Proceedings of SPIE-The International Society for Optical  
Engineering, 3999(Pt. 2, Advances in Resist Technology and  
Processing XVII), 1202-1206 (English) 2000. CODEN:  
PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society  
for Optical Engineering.
- AB Several new poly(benzyl ether) and poly(benzyl ester) dendrimers  
that incorporate acid- and thermally-labile peripheral groups have  
been synthesized. tert-Bu ester terminated poly(benzyl ether)  
dendrimers were synthesized using  $\alpha$ -bromo-tert-Bu acetate in  
the preliminary protection step to afford the first generation alc.  
A std. bromination of the focal point benzylic alc. was used for the  
activation step, while std. Williamson ether conditions were used  
for the coupling steps to afford higher generation poly(benzyl  
ether) dendrons. tert-Bu ester terminated dendrons were then  
coupled to a difunctional core to produce the [G-3] dendrimer.  
tert-Bu carbonate (t-Boc) terminated poly(benzyl ester) dendrimers  
were also synthesized. This class of dendrimers was synthesized by  
first protecting monomeric building block 3,5-dihydroxybenzaldehyde  
with di-t-Bu dicarbonate. A reductive activation step afforded the  
[G-1] alc. The growth steps were accomplished by either Mitsunobu  
etherification with 3,5-dihydroxybenzaldehyde or by esterification  
with 5-hydroxymethylisophthalic acid. Finally, coupling of the  
benzyl alc. dendrons to a polyfunctional core afforded second and  
third generation dendrimers. Chem. amplified **resists**

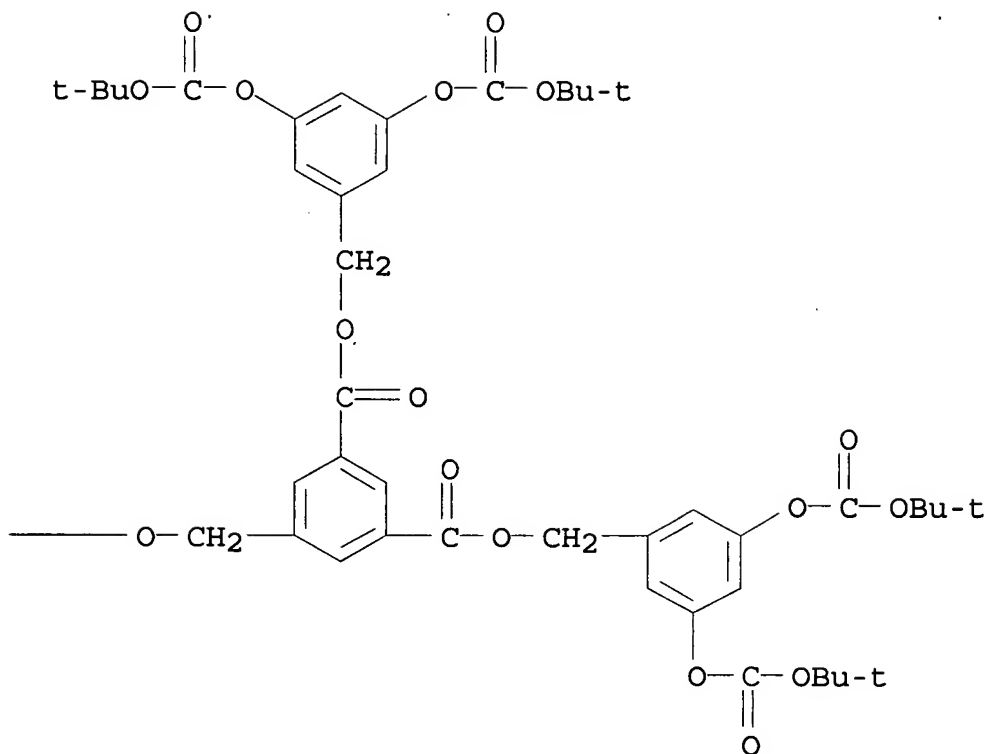
IT 267874-32-8P

RN 267874-32-8 HCA

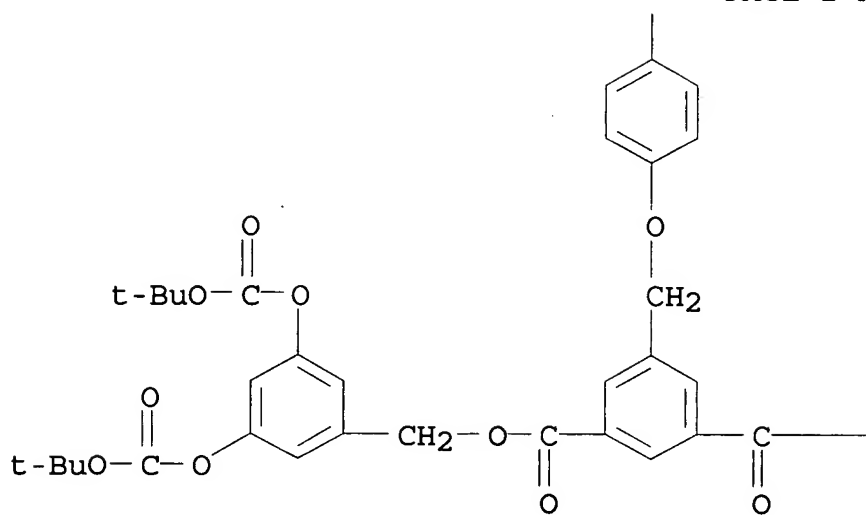
PAGE 1-A



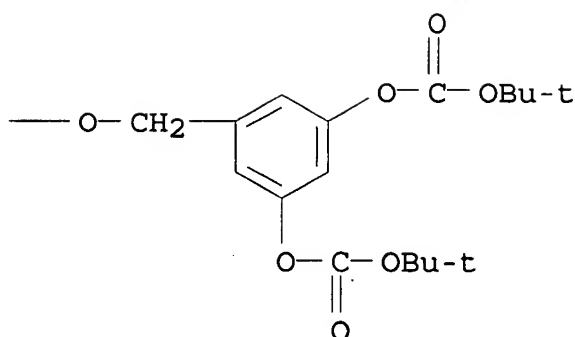
PAGE 1-B



PAGE 2-A



PAGE 2-B

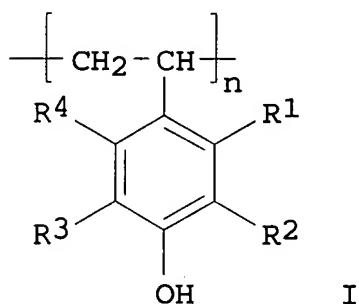


- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST dendrimer based chem amplified **photoresist** vacuum UV lithog
- IT Electron beam **resists**  
**Photoresists**  
 (chem. amplified; chem. amplified **resists** for sub-100 nm lithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT Polyesters, uses  
 (dendrimers; chem. amplified **resists** for sub-100 nm lithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT Dendritic polymers  
 (polyesters; chem. amplified **resists** for sub-100 nm lithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT 328396-58-3DP, tert-Bu hydroxyacetate ether-terminated  
 (dendritic; tert-Bu ester terminated dendrimer for chem. amplified **resists** for sub-100 nm photolithog.)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate 213740-80-8  
 (photoacid generator; chem. amplified **resists** for sub-100 nm photolithog. based on tert-Bu acetate- or tert-Bu carbonate terminated dendrimers)
- IT 267874-30-6 267874-31-7 305323-42-6 305323-45-9  
 (prepn. of tert-Bu carbonate terminated dendrimer for

- resist** application)
- IT 267874-29-3 328084-37-3 328084-38-4 328084-39-5 328084-40-8  
(prepn. of tert-Bu ester terminated dendrimer for **photoresist** application)
- IT 200133-25-1  
(prepn. of tert-Bu ester terminated dendrimer for **resist** application)
- IT 26153-38-8, 3,5-Dihydroxybenzaldehyde  
(reaction with di-tert-Bu carbonate in prepn. of ter-Bu carbonate terminated dendrimer for **photoresist** application)
- IT 34619-03-9, Di-tert-butyl carbonate  
(reaction with dihydroxybenzaldehyde in prepn. of ter-Bu carbonate terminated dendrimer for **resist** application)
- IT 5292-43-3  
(reaction with dihydroxybenzyl alc. in prepn. of tert-Bu ester terminated dendrimer for **resist** application)
- IT 29654-55-5, 3,5-Dihydroxybenzyl alcohol  
(reaction with  $\alpha$ -bromo-tert-Bu acetate in prepn. of tert-Bu ester terminated dendrimer for **resist** application)
- IT 267874-32-8P  
(tert-Bu carbonate terminated dendrimer for chem. amplified **resists** for sub-100 nm photolithog.)

L70 ANSWER 15 OF 65 HCA COPYRIGHT 2007 ACS on STN  
134:123569 Positive-working **photoresist** composition and pattern-formation using it. Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001013685 A  
20010119, 45 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
JP 1999-181820 19990628.

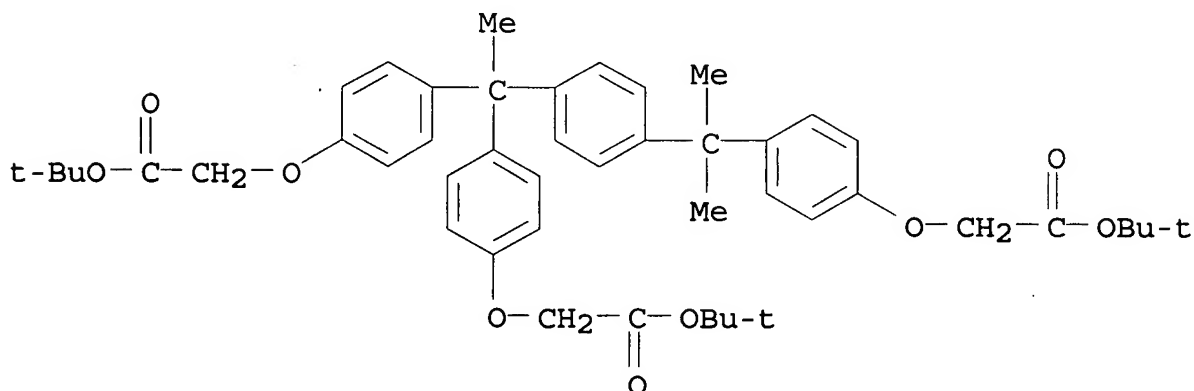
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AB The title **photoresist** compn. contains (a) an alkali-sol. resin comprising repeating units  $[\text{CH}_2\text{CH}(\text{C}_6\text{H}_4\text{OH-p})]_m$ , I, and  $[\text{CH}_2\text{CHX}]_k$  [ $\text{R}_1\text{-4} = \text{H}$ ,  $\text{X} = \text{arom. substituent}$ ;  $0.3 \leq m \leq 0.90$ ;  $0.05 \leq n \leq 0.30$ ;  $0.05 \leq k \leq 0.40$ ], (b) a compd.

IT 153698-54-5  
(acid decomposable compd.; pos. **photoresist** compn.  
contg. alkali-sol. resin, acid-decomposable compd., acid  
generator, and basic compd.)

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

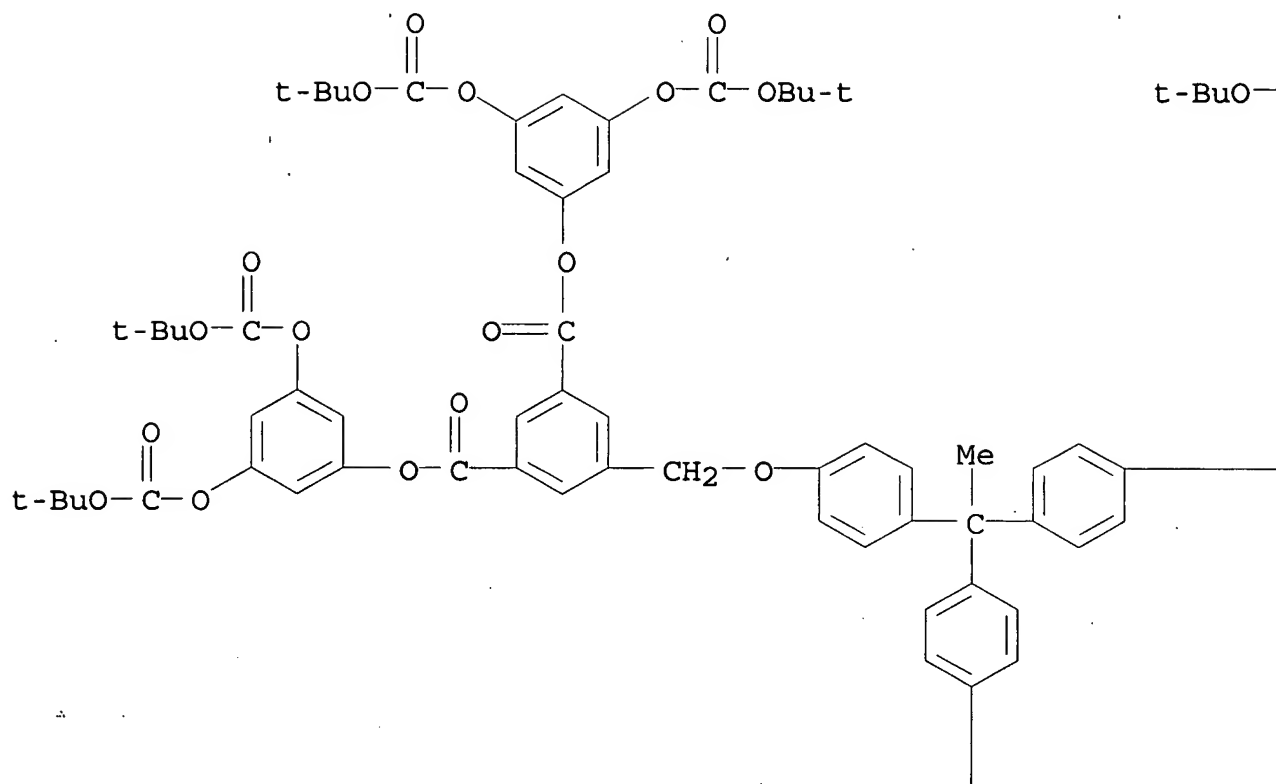


IT 197447-16-8 214208-08-9 224568-31-4

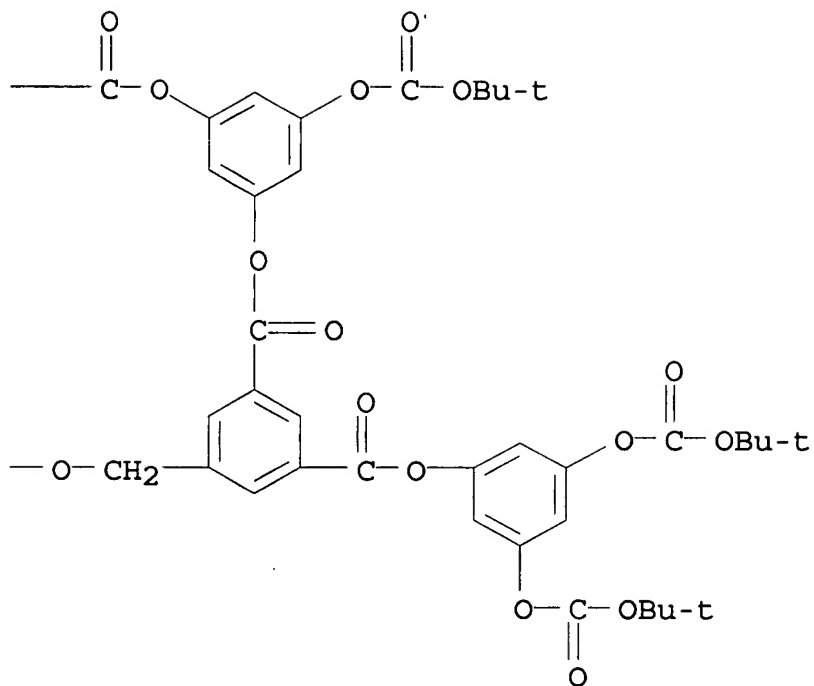
- (acid generator; pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)
- IT 75-59-2, Tetramethylammonium hydroxide  
(developer; pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)
- IT 4397-14-2DP, 2,6-Dimethyl-4-methylolphenol, reaction products with hydroxystyrene copolymer 24979-74-6DP, 4-Hydroxystyrene-styrene copolymer, reaction products with methylolphenol 321164-59-4DP, 4-Hydroxystyrene-1-vinylnaphthalene copolymer, reaction products with methylolphenol  
(pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)
- IT 484-47-9 3001-72-7  
(pos. **photoresist** compn. contg. alkali-sol. resin, acid-decomposable compd., acid generator, and basic compd.)
- L70 ANSWER 16 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 133:357149 Dendrimers with thermally labile end groups: An alternative approach to chemically amplified **resist** materials designed for sub-100 nm lithography. Tully, David C.; Trimble, Alexander R.; Frechet, Jean M. J. (Department of Chemistry, University of California at Berkeley, Berkeley, CA, 94720-1460, USA). Advanced Materials (Weinheim, Germany), 12(15), 1118-1122 (English) 2000. CODEN: ADVMEW. ISSN: 0935-9648. Publisher: Wiley-VCH Verlag GmbH.
- AB Chem. amplified **resists** are described which are based on tert-butoxycarbonyloxy-terminated dendrimers and photoacid generators. **Resist** formulations prepd. from these dendrimers were highly sensitive to both deep-UV and electron-beam exposures, providing reproducible patterning <100 nm.
- IT 305323-50-6P  
(lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- RN 305323-50-6 HCA
- CN 1,3-Benzenedicarboxylic acid, 5,5',5''-[ethylidynetris(4,1-phenyleneoxymethylene)]tris-, hexakis[3,5-bis[(1,1-dimethylethoxy)carbonyl]oxy]phenyl] ester (9CI) (CA INDEX NAME)



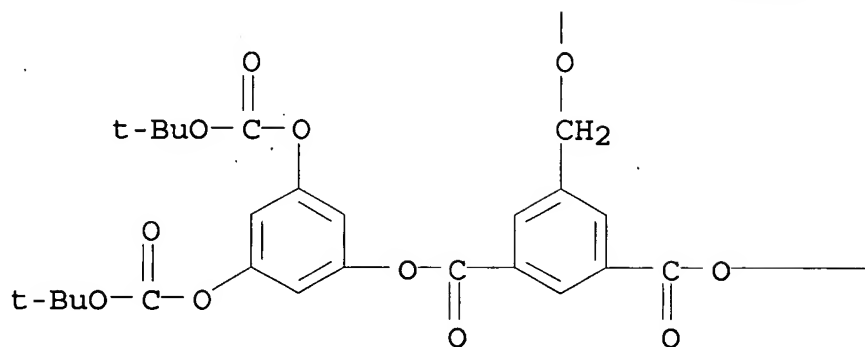
PAGE 1-A



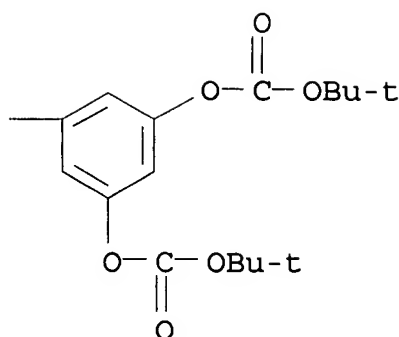
PAGE 1-B



PAGE 2-A



PAGE 2-B

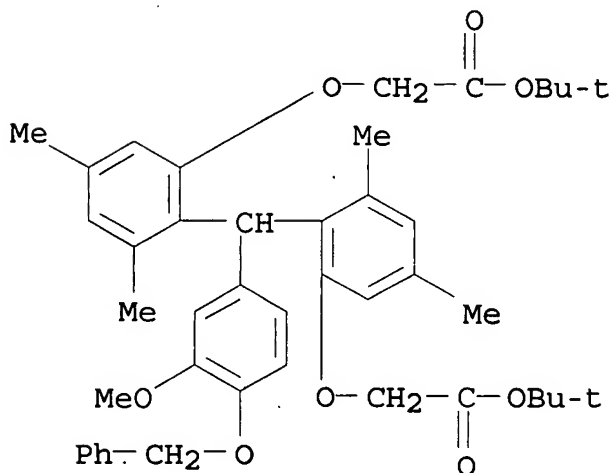


- CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST chem amplified lithog **resist** butoxycarbonyloxy terminated dendrimer; **photoresist** chem amplified butoxycarbonyloxy terminated dendrimer; electron beam **resist** chem amplified butoxycarbonyloxy terminated dendrimer
- IT Electron beam **resists**  
**Photoresists**  
 (chem. amplified; lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- IT 305323-50-6P 305820-71-7P  
 (lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate 240435-11-4  
 (photoacid generator; lithog. chem. amplified **resists** using tert-butoxycarbonyloxy-terminated dendrimers)
- IT 26153-38-8P, 3,5-Dihydroxybenzaldehyde 267874-30-6P 267874-31-7P  
 305323-33-5P 305323-36-8P 305323-39-1P 305323-42-6P  
 305323-45-9P  
 (synthesis of tert-butoxycarbonyloxy-terminated dendrimers for lithog. chem. amplified **resists** formulations)
- L70 ANSWER 17 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 133:321704 Preparation of partially protective trisphenols for dissolution inhibitors of **photoresists**. Shiomi, Yasukazu; Miyagi, Sachiko (Honshu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000309561 A 20001107, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-247755 19990901. PRIORITY: JP 1999-49016 19990225.

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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

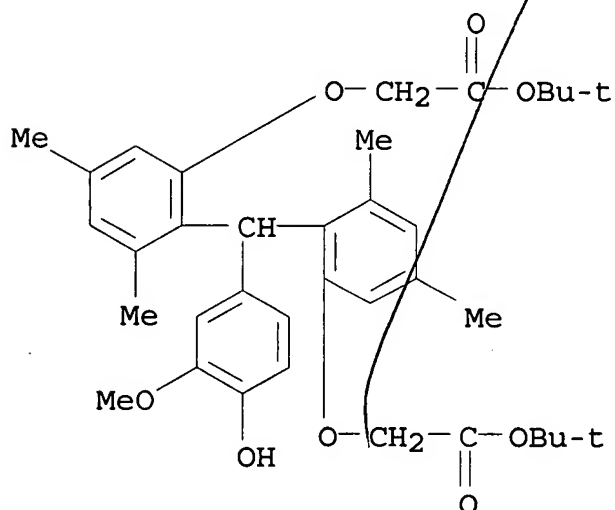
- AB Title compds. I (R1 = C1-4 alkyl, alkoxy; R2 = C1-6 alkyl, C5-6 cycloalkyl; X = (C1-4 alkoxy)carbonylmethyl, (C1-4 alkoxy)carbonyl, tetrahydropyranyl; m = 0-2; n = 0-3), useful for dissoln. inhibitors of chem. amplification **photoresists** (no data), are prepd. by reaction of aldehydes II (R1, m = same as I) with benzyl halides in the presence of alkalies, reaction of resulting benzyloxybenzaldehydes with phenols III (R2, n = same as I) in the presence of acid catalysts, protection of two OH groups of resulting monobenzylated trisphenols with protecting agents selected from C1-4 alkyl haloacetates, di(C1-4 alkyl) carbonates, and 2,3-dihydro-4-H-pyran, and hydrogenolysis of protected trisphenols in the presence of catalysts. Salicylaldehyde was etherified with benzyl chloride in DMF in the presence of K<sub>2</sub>CO<sub>3</sub> at 70° for 2 h, condensed with 2-cyclohexyl-5-methylphenol in MeOH in the presence of HCl at 60° for 3 h, protected with tert-Bu chloroacetate in DMF in the presence of K<sub>2</sub>CO<sub>3</sub> at 70-100° for 28 h, and hydrogenated in the presence of Pd/C in THF at 40° for 8 h to give 4,4'-bis(1-tert-butoxycarbonylmethoxy-2-cyclohexyl-5-methylphenyl)methyl-2-hydroxybenzene in 77.2% total yield.
- IT 303108-91-0P  
(prepn. of partially protective trisphenols by condensation of benzyloxybenzaldehydes with phenols and protection)
- RN 303108-91-0 HCA
- CN Acetic acid, 2,2'-[[[3-methoxy-4-(phenylmethoxy)phenyl]methylene]bis[(3,5-dimethyl-2,1-phenylene)oxy]]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IT 303108-89-6P

(prepn. of partially protective trisphenols by condensation of benzyloxybenzaldehydes with phenols and protection)

RN 303108-89-6 HCA

CN Acetic acid, 2,2'-[[[(4-hydroxy-3-methoxyphenyl)methylene]bis[(3,5-dimethyl-2,1-phenylene)oxy]]bis-, bis(1,1-dimethylethyl) ester (9CI)  
(CA INDEX NAME)

IC ICM C07C069-712

ICS C07C067-343; C07D309-12; C07C037-20; C07C039-15; C07C045-71;  
C07C047-575CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 74ST protected phenol prepn dissoln inhibitor **photoresist**;  
benzyloxybenzaldehyde condensation phenol; alkyl haloacetate  
protection trisphenol; carbonate alkyl protection trisphenol; pyran  
protection trisphenolIT **Photoresists**(chem. amplification; prepn. of partially protective trisphenols  
for dissoln. inhibitors of **photoresists**)IT 2426-87-1P, 3-Methoxy-4-benzyloxybenzaldehyde 5896-17-3P,  
2-Benzyloxybenzaldehyde 303108-82-9P 303108-83-0P 303108-85-2P  
303108-88-5P 303108-90-9P **303108-91-0P**(prepn. of partially protective trisphenols by condensation of  
benzyloxybenzaldehydes with phenols and protection)IT 303108-81-8P 303108-84-1P 303108-86-3P **303108-89-6P**(prepn. of partially protective trisphenols by condensation of  
benzyloxybenzaldehydes with phenols and protection)

133:170234 Alkali-soluble or acid-decomposable polysiloxane and positively working **photoresist** compositions containing it. Mizutani, Kazuyoshi; Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000219743 A 20000808, 59 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-24236 19990201.

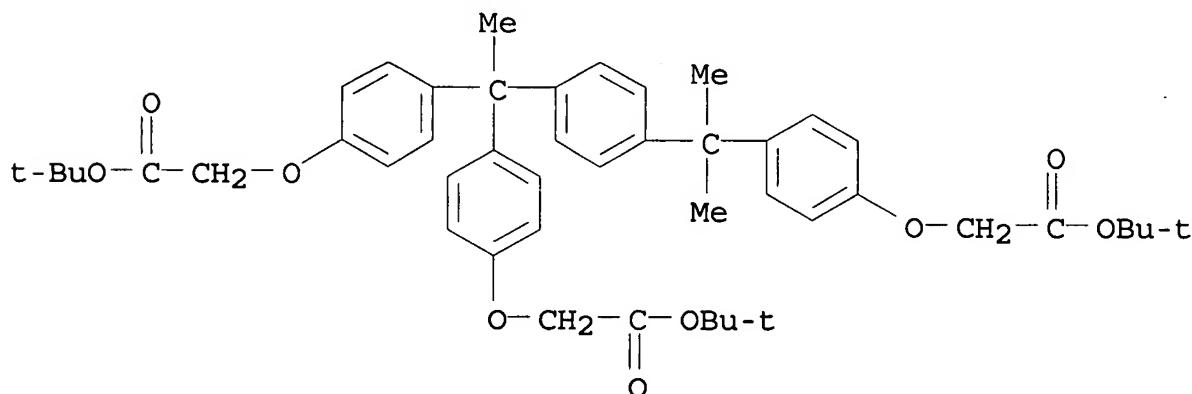
AB The alkali-sol. polysiloxane has a structure unit  $[\text{Si}[(\text{CH}_2)_n\text{LXZ}]\text{O}_{3/2}]$  [I;  $n = 1-6$ ;  $\text{L} = \text{AOCO}, \text{ACO}_2, \text{ANHCO}, \text{ANHCO}_2, \text{ANHCONH}, \text{ACONH}, \text{AOCONH}, \text{ACONHCO}, \text{AS}$ ;  $\text{A} = \text{none}, \text{arylene}$ ;  $\text{X} = \text{none}, \text{divalent linkage group}$ ;  $\text{Z} = \text{C}_6\text{H}_5\text{-l}(\text{OH})\text{l}, \text{CY}_3\text{-m}[\text{C}_6\text{H}_5\text{-l}(\text{OH})\text{l}]\text{m}$ ;  $\text{Y} = \text{H}, \text{alkyl}, \text{aryl}, \text{aralkyl}$ ;  $\text{l}, \text{m} = 1-3$ ], or  $[\text{Si}[(\text{CH}_2)_n\text{OCOXZ}]\text{O}_{3/2}]$  (II). The acid-decomposable polysiloxane has (A) the structure unit I whose phenolic OH is (partially) protected with acid-decomposable group or (B) structure units II and  $[\text{Si}[(\text{CH}_2)_n\text{OCOXZ'}]\text{O}_{3/2}]$  [III;  $n = 1-6$ ;  $\text{Z}' = \text{C}_6\text{H}_5\text{-l}(\text{OR})\text{l}, \text{CY}_3\text{-m}[\text{C}_6\text{H}_5\text{-l}(\text{OR})\text{l}]\text{m}$ ;  $\text{R} = \text{acid-decomposable group}$ ]. The **photoresist** compn. contains an acid-decomposable polysiloxane having the structure unit III and a photoacid generator. The **photoresist** compn. contains (A) an alkali-sol. polysiloxane having structure unit II. (B) a photoacid generator, and (C) phenolic compds. (partially) protected with an acid-decomposable group or arom. or aliph. carboxylic acid (partially) protected with an acid-decomposable group. The compn. shows high sensitivity and gives high-resoln. **resist** images to be useful for manuf. of semiconductor IC.

IT 153698-54-5

(**photoresist** compn. contg. alkali-sol. or acid-decomposable polysiloxane)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

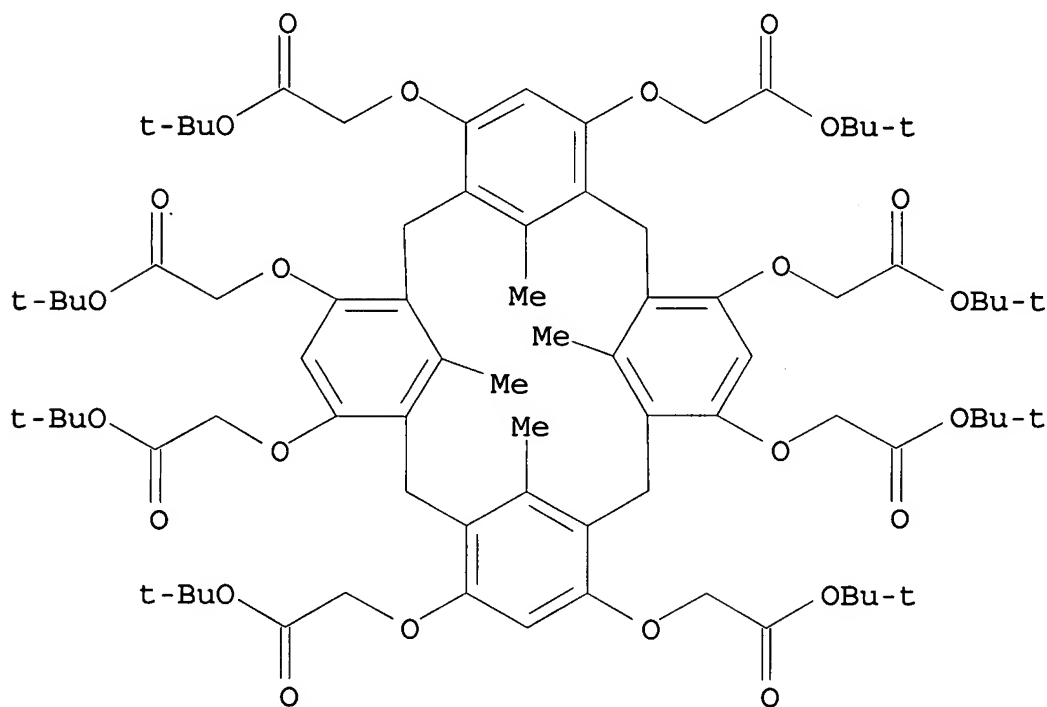


IC ICM C08G077-14

- ICS C08K005-02; C08K005-3492; C08K005-36; C08K005-41; C08K005-42;  
C08L083-06; G03F007-004; G03F007-039; G03F007-075; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38, 76
- ST alkali soluble polysiloxane acid decomposable **photoresist**;  
pos **resist** photo siloxane alkali soluble; semiconductor IC  
pos **photoresist** polysiloxane
- IT Positive **photoresists**  
(**photoresist** compn. contg. alkali-sol. or  
acid-decomposable polysiloxane)
- IT Polysiloxanes, preparation  
(**photoresist** compn. contg. alkali-sol. or  
acid-decomposable polysiloxane)
- IT 153698-46-5 197447-16-8 287925-54-6 287925-55-7  
(photoacid generator; **photoresist** compn. contg.  
alkali-sol. or acid-decomposable polysiloxane)
- IT 109-53-5DP, Isobutyl vinyl ether, reaction products with phenolic  
OH-contg. polysiloxanes 109-92-2DP, Ethyl vinyl ether, reaction  
products with phenolic OH-contg. polysiloxanes 287925-26-2DP,  
reaction products with Bu vinyl ether 287925-26-2P  
287925-28-4DP, reaction products with Et vinyl ether  
287925-30-8DP, reaction products with Bu vinyl ether 287925-30-8P  
287925-32-0P 287925-34-2P 287925-36-4P 287925-39-7P  
287925-40-0P 287925-42-2P 287925-44-4P 287925-46-6P  
287925-48-8P 287925-50-2P 287925-51-3P 287925-53-5P  
(**photoresist** compn. contg. alkali-sol. or  
acid-decomposable polysiloxane)
- IT 153698-54-5 153698-63-6 199432-82-1 228101-60-8  
287925-56-8  
(**photoresist** compn. contg. alkali-sol. or  
acid-decomposable polysiloxane)
- L70 ANSWER 19 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 133:142612 Calixarenes for use as dissolution inhibitors in lithographic  
**photoresist** compositions. Ito, Hiroshi; Nakayama, Tomonari;  
Ueda, Mitsuru (International Business Machines Corp., USA). U.S. US  
6093517 A 20000725, 18 pp. (English). CODEN: USXXAM.  
APPLICATION: US 1998-127325 19980731.
- AB The invention relates generally to photolithog., particularly, to  
dissoln. inhibitors for use in a lithog. **photoresist**  
compn. The lithog. **photoresist** compn. contains novel  
calixarene compds., particularly calix[4]resorcinarenes that are  
partially or wholly protected with acid-labile groups, as dissoln.  
inhibitors. A process for using the compn. to generate  
**resist** images on a substrate is described, i.e., in the  
manuf. of integrated circuits or the like.
- IT 286455-03-6P 286455-04-7P 286455-05-8P

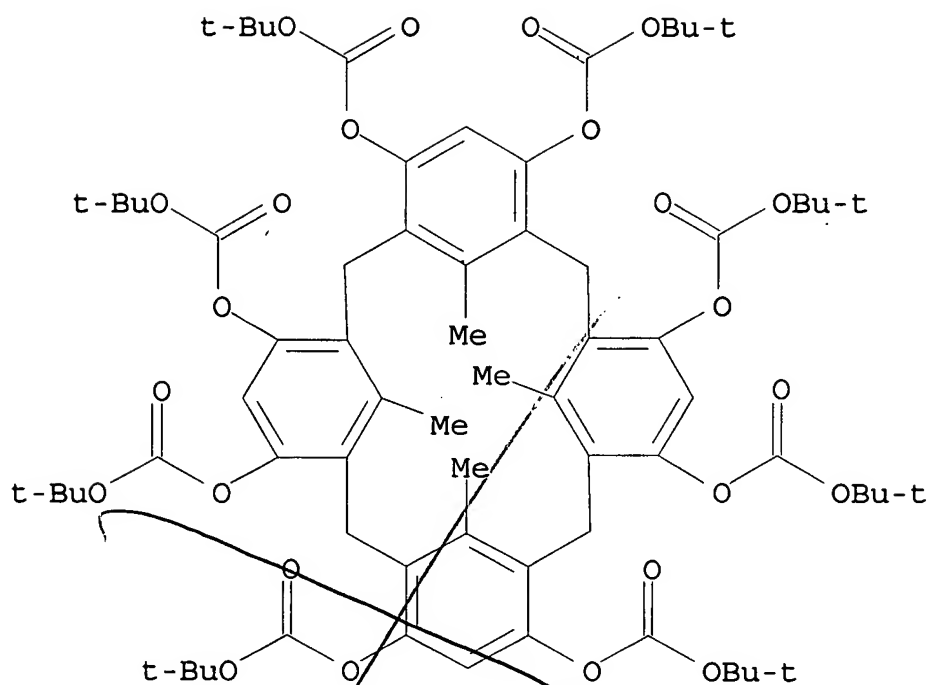
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(prepn. of, calixarenes for use as dissoln. inhibitors in lithog.
photoresist compns.)
```

CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''',2''''''-  
[[25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos  
a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-  
4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-,  
octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX  
NAME)



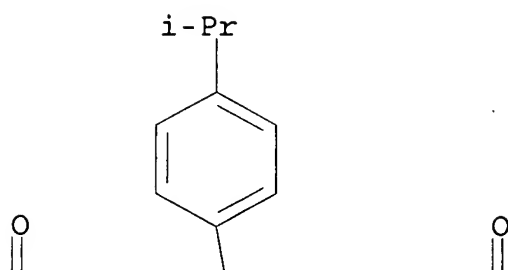
CN Carbonic acid, 25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.1  
15,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-  
dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)  
ester, stereoisomer (9CI) (CA INDEX NAME)



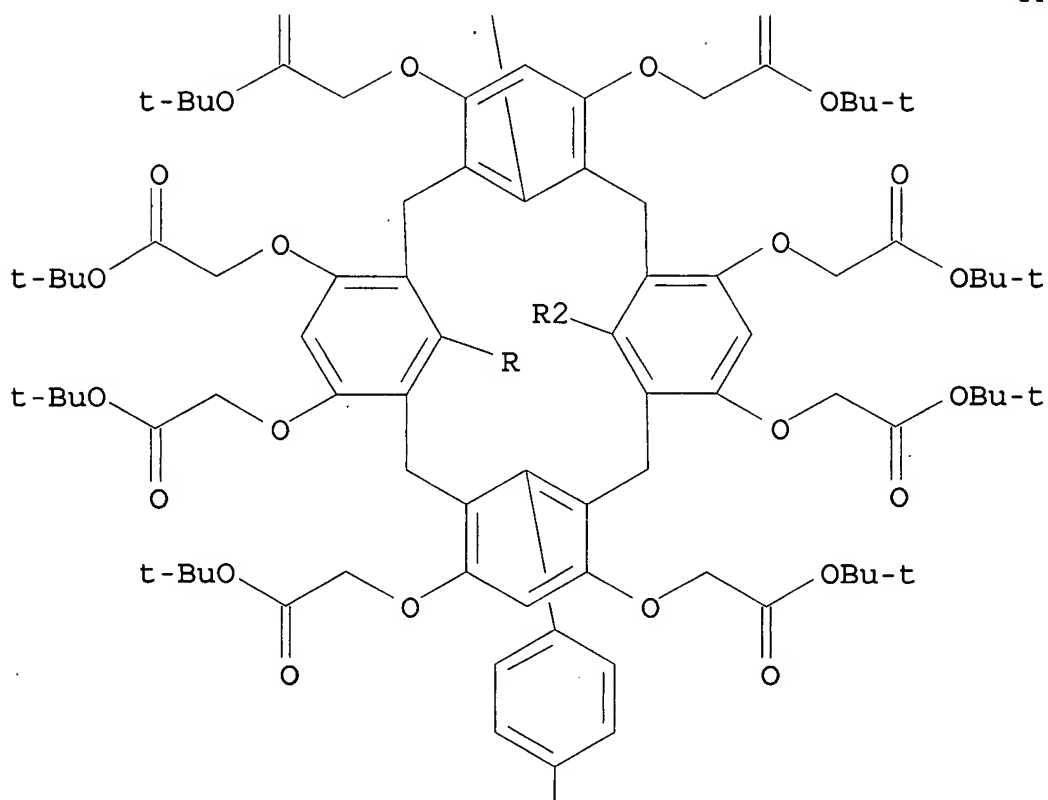


RN	286455-05-8	HCA
CN	Acetic acid, 2,2',2'',2''',2'''',2''''',2''''',2'''''- [[25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13, 7.19,13,115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21, 23-dodecaene-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)	

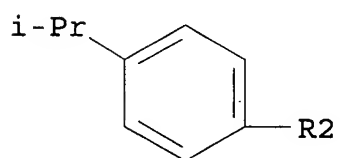
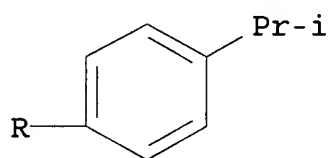
PAGE 1-A



PAGE 2-A

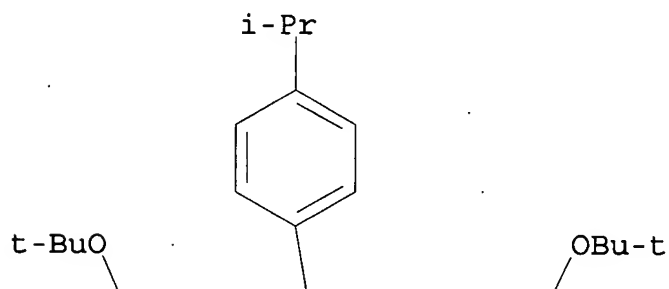


PAGE 3-A

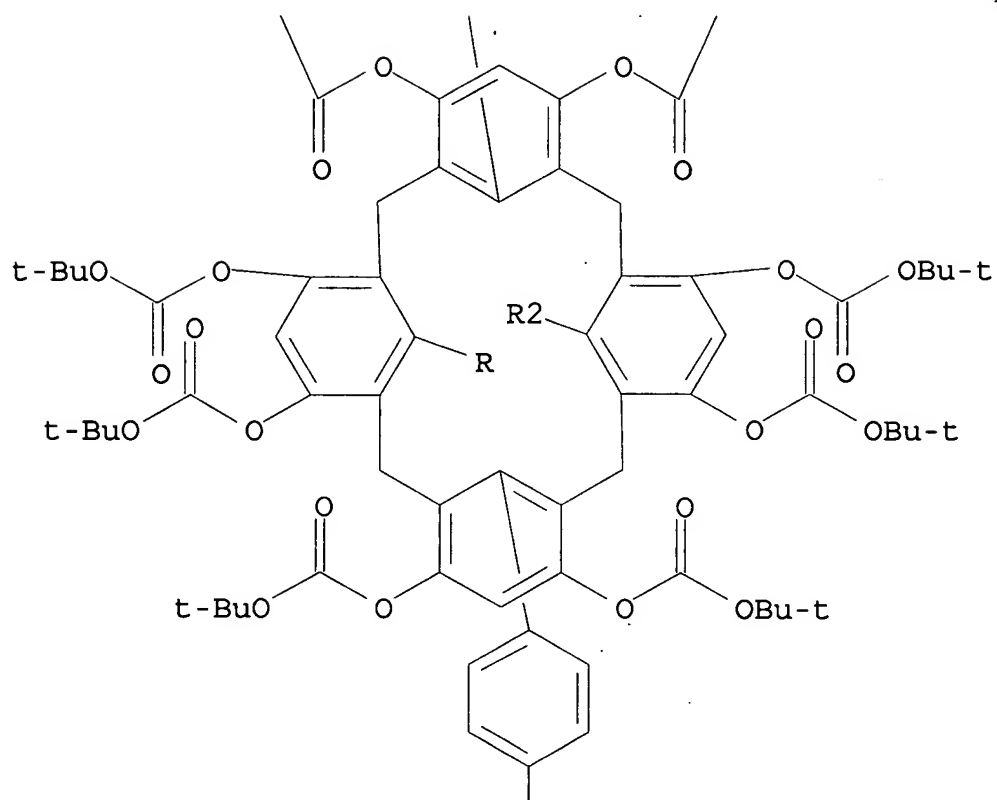


RN 286455-06-9 HCA  
CN Carbonic acid, 25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacosan-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

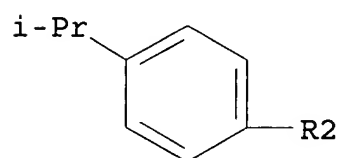
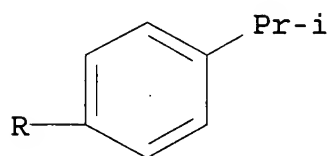
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PAGE 2-A

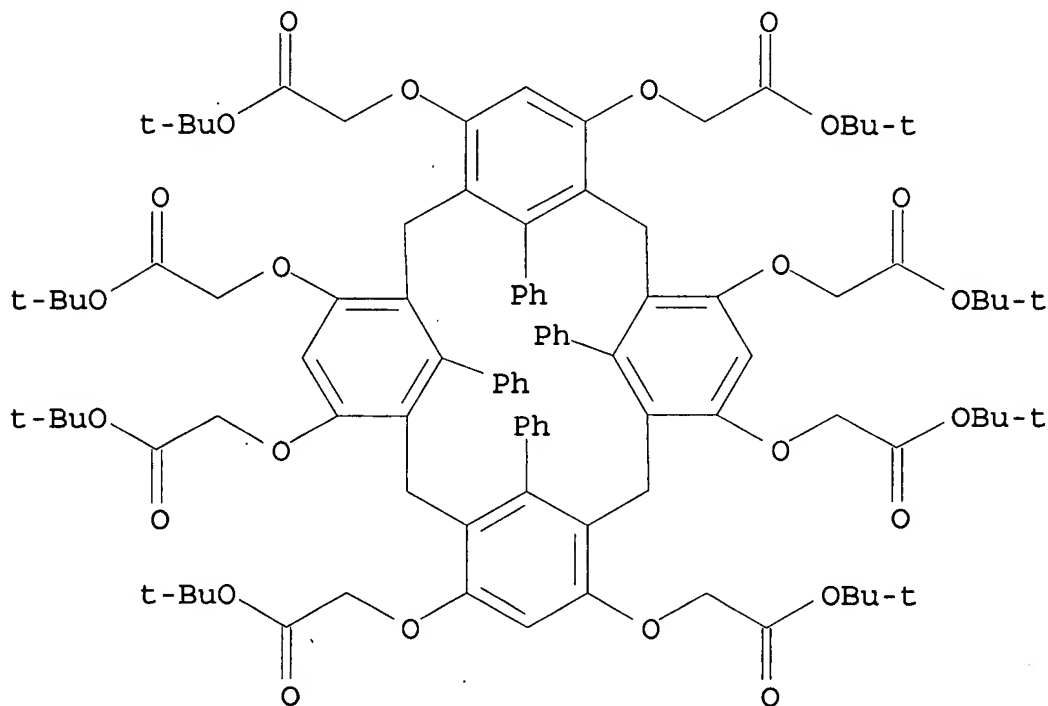


PAGE 3-A



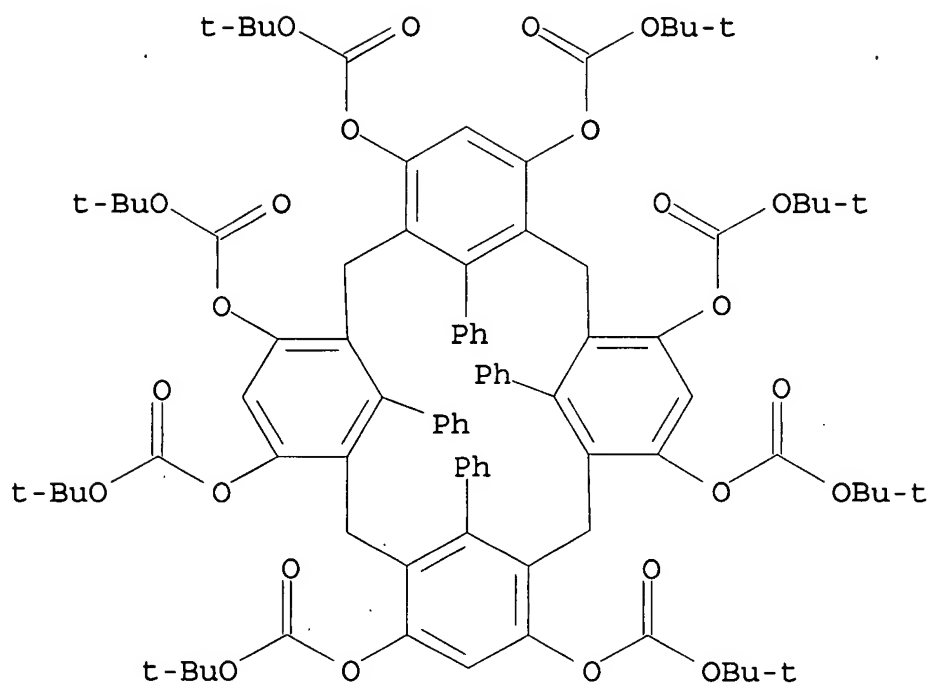
RN 286455-07-0 HCA

CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''',2''''''-  
 [[25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.115,19]octacos  
 a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-  
 4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-,  
 octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX  
 NAME)

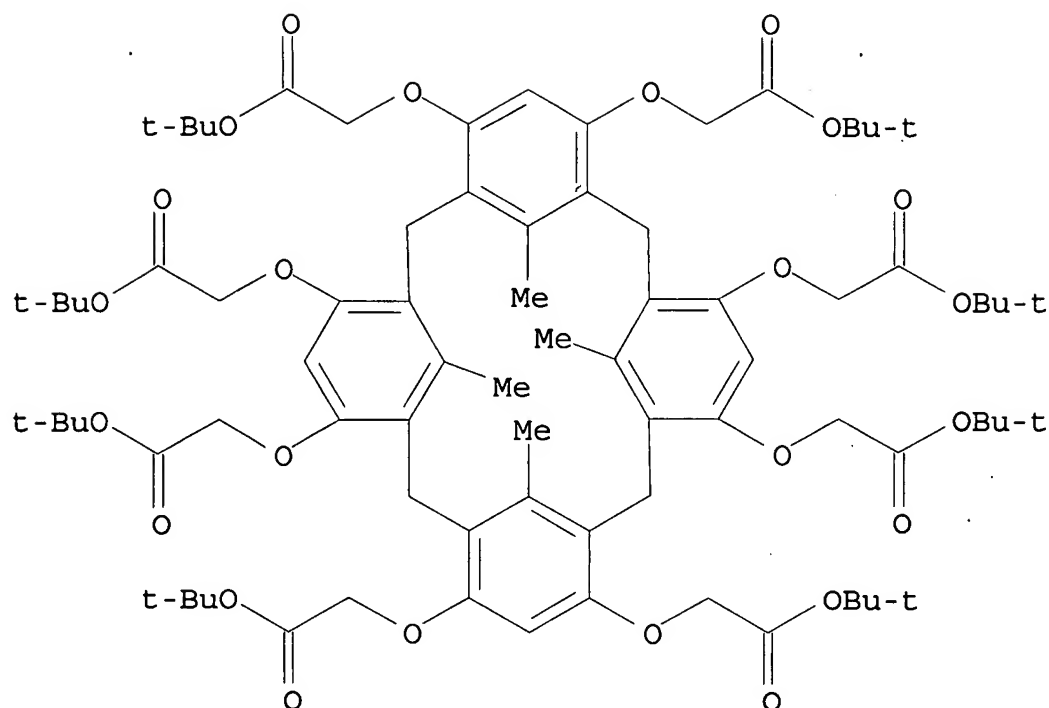


RN 286455-08-1 HCA

CN Carbonic acid, 25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.1  
 15,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-  
 dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)  
 ester, stereoisomer (9CI) (CA INDEX NAME)



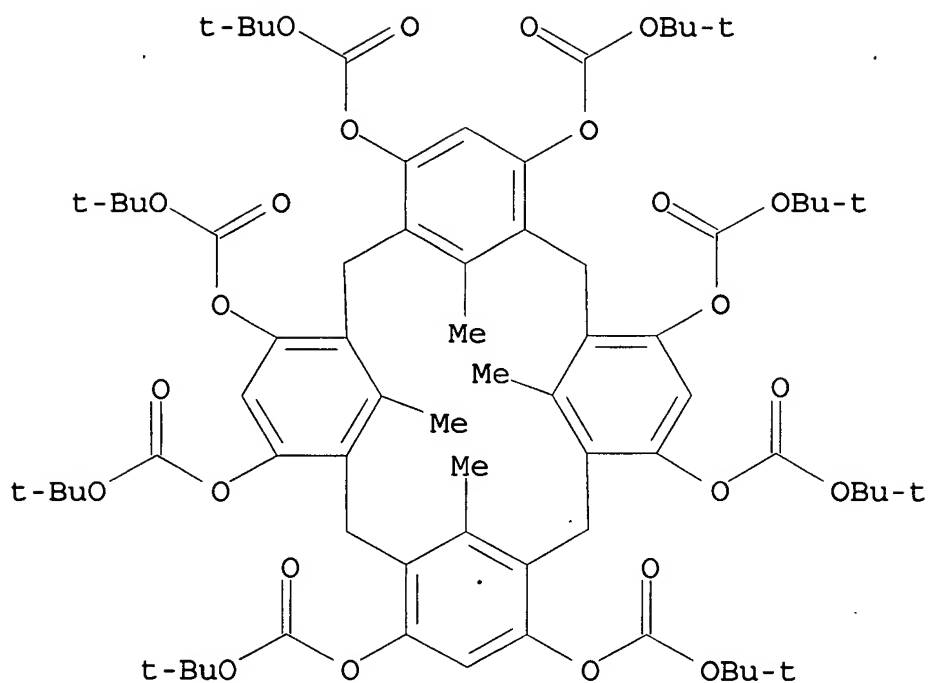
RN	286455-26-3	HCA
CN	Acetic acid, 2,2',2'',2''',2'''',2''''',2''''',2''''''- [[25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene- 4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)	



RN 286455-27-4 HCA

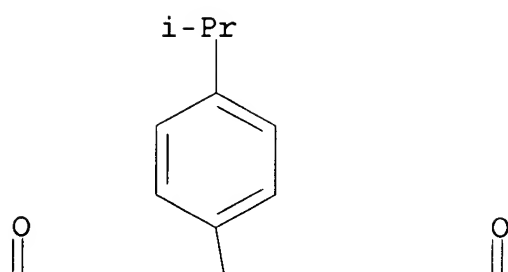
CN Carbonic acid, 25,26,27,28-tetramethylpentacyclo[19.3.1.13,7.19,13.1  
15,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-  
dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)  
ester, stereoisomer (9CI) (CA INDEX NAME)



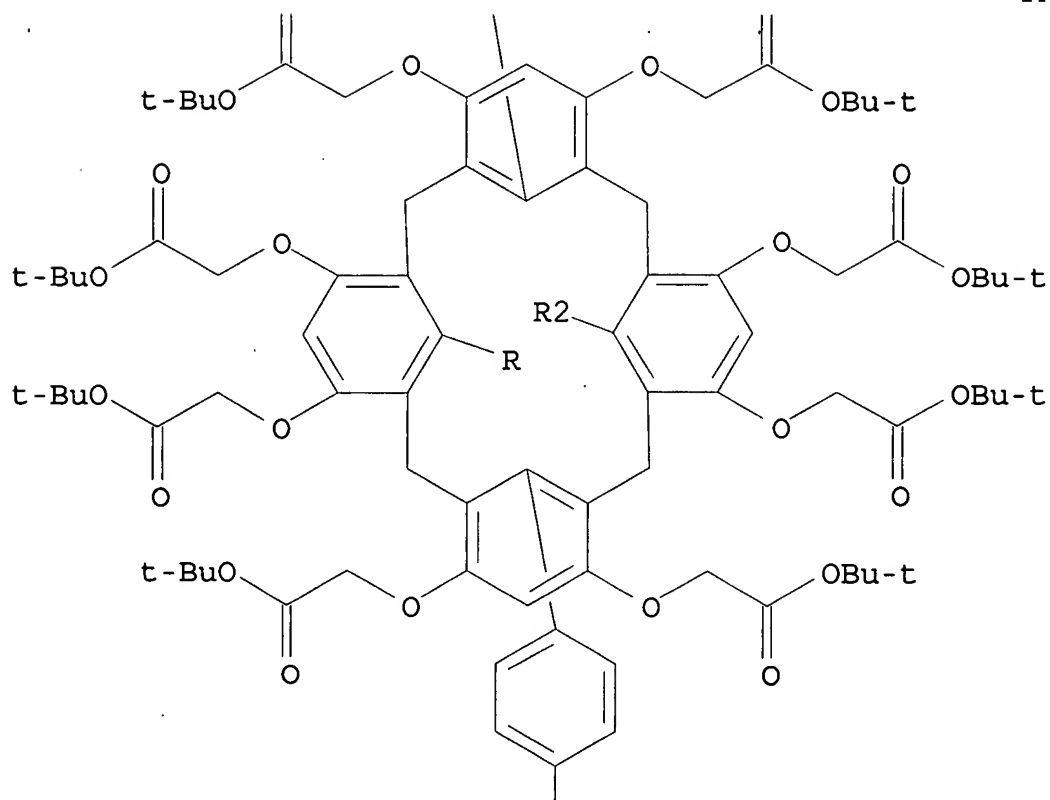


RN 286455-28-5 HCA  
 CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''',2''''''-  
 [[25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,  
 7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,  
 23-dodecaene-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-,  
 octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX  
 NAME)

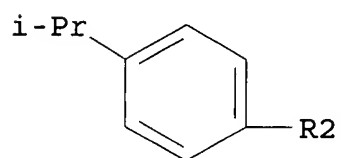
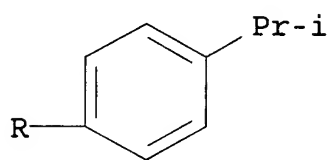
PAGE 1-A



PAGE 2-A

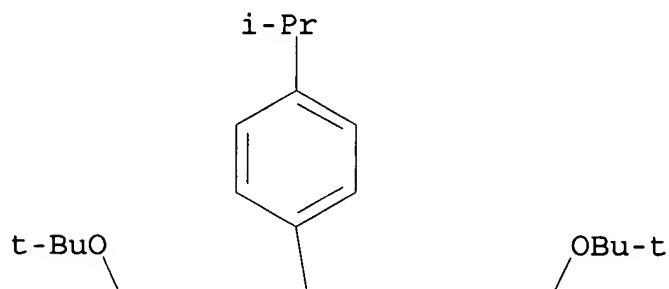


PAGE 3-A

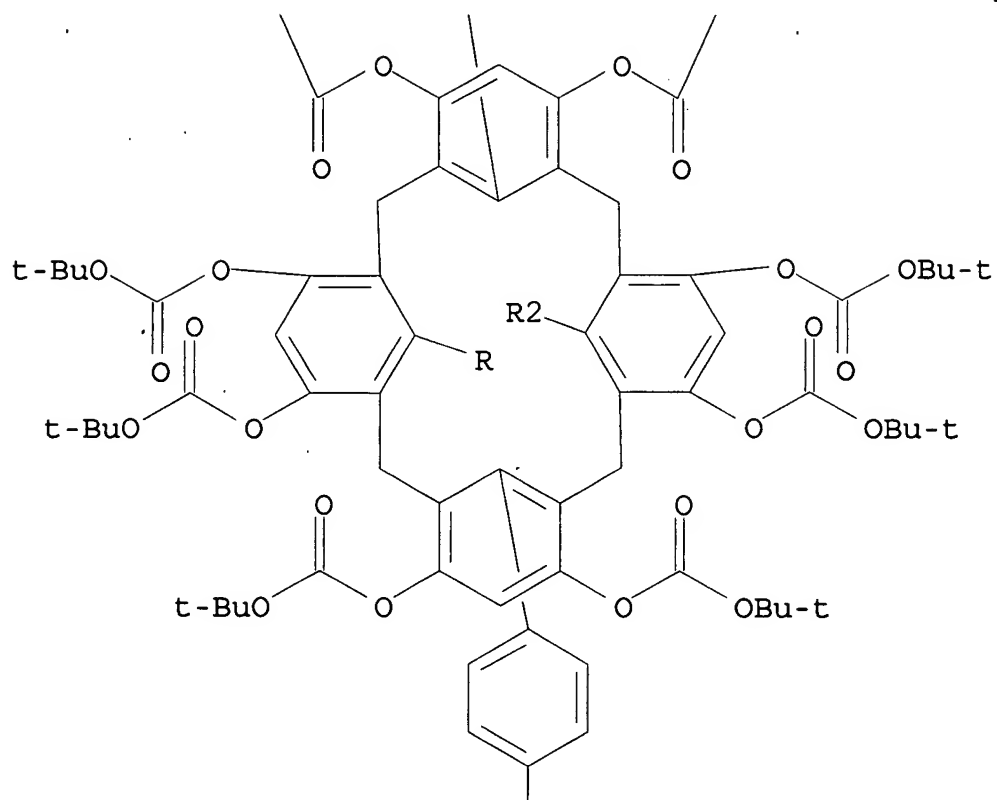


RN 286455-29-6 HCA  
CN Carbonic acid, 25,26,27,28-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

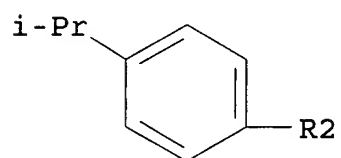
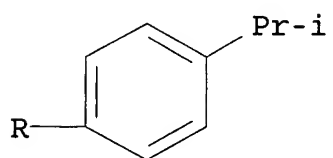
PAGE 1-A



PAGE 2-A

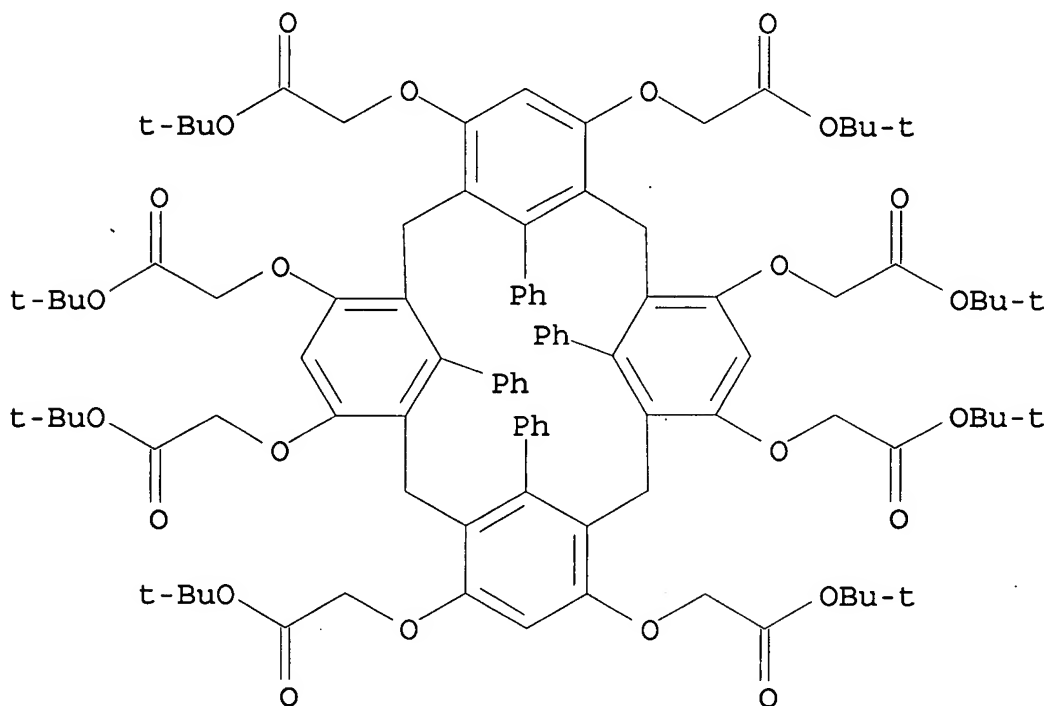


PAGE 3-A



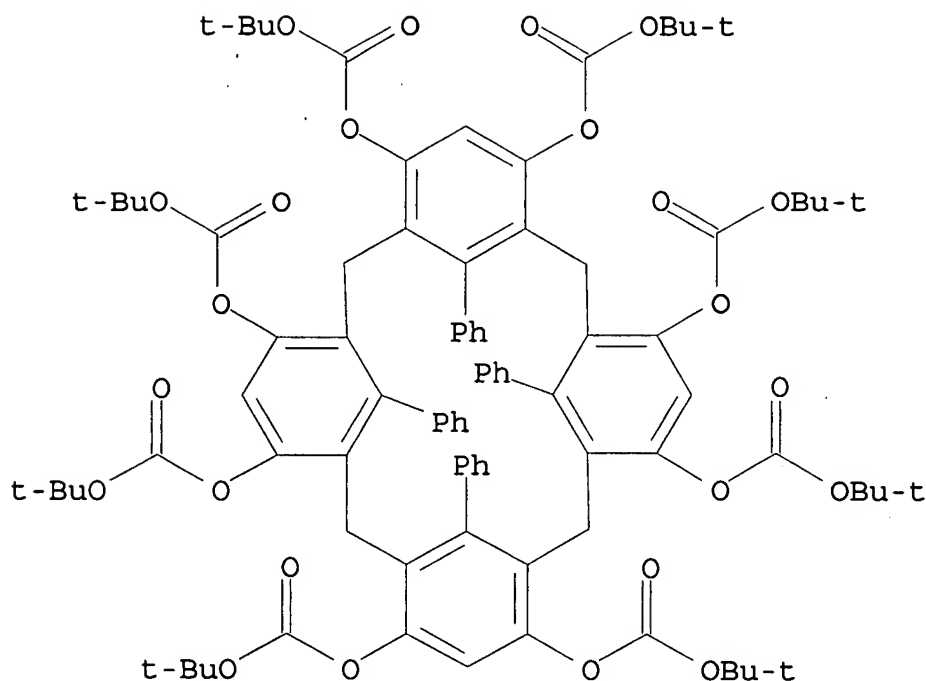
RN 286455-30-9 HCA

CN Acetic acid, 2,2',2'',2''',2''''',2''''',2''''',2''''''-  
 [[25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.115,19]octacos  
 a-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-  
 4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-,  
 octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX  
 NAME)



RN 286455-31-0 HCA

CN Carbonic acid, 25,26,27,28-tetraphenylpentacyclo[19.3.1.13,7.19,13.1  
 15,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-  
 dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl)  
 ester, stereoisomer (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C07C041-00

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 35

ST calixarene dissoln inhibitor lithog **photoresist**

IT Dissolution

Integrated circuits

Photolithography

**Photoresists**

(calixarenes for use as dissoln. inhibitors in lithog. **photoresist** compns.)

IT Dendritic polymers

Metacyclophanes

(calixarenes for use as dissoln. inhibitors in lithog. **photoresist** compns.)

IT 65338-98-9

(dissoln. behavior of calixarenes for use as dissoln. inhibitors in lithog. **photoresist** compns.)

IT 274681-52-6P 286437-13-6P 286437-14-7P 286455-02-5P

286455-03-6P 286455-04-7P 286455-05-8P

286455-06-9P 286455-07-0P 286455-08-1P

286455-24-1P 286455-25-2P 286455-26-3P

286455-27-4P 286455-28-5P 286455-29-6P

286455-30-9P 286455-31-0P

(prepn. of, calixarenes for use as dissoln. inhibitors in lithog.  
photoresist compns.)

L70 ANSWER 20 OF 65 HCA COPYRIGHT 2007 ACS on STN

132:341060 Dendrimer-based chemically amplified **resist**

materials. Tully, David C.; Trimble, Alexander R.; Frechet, Jean M. J. (Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA). Polymer Preprints (American Chemical Society, Division of Polymer Chemistry), 41(1), 142-143 (English) 2000. CODEN: ACPPAY. ISSN: 0032-3934. Publisher: American Chemical Society, Division of Polymer Chemistry.

AB The authors have been utilizing the unusual properties of dendritic polymers in hopes of achieving an improved class of **resist** materials with the capability of imaging features with mol. scale resoln. Several new dendrimers were synthesized continuing acid and thermally labile groups on their periphery. The tert-Bu ester and carbonate peripheral groups can be removed by an acid-catalyzed thermolysis to drastically alter the soly. properties of the dendrimer, thus forming the basis for a 2-tone chem. amplified **resist** material. This 2-tone system shows a high sensitivity towards both DUV and electron beam irradiation. The authors were able to pattern feature sizes below 100 nm using e-beam lithog.

IT 267874-32-8P

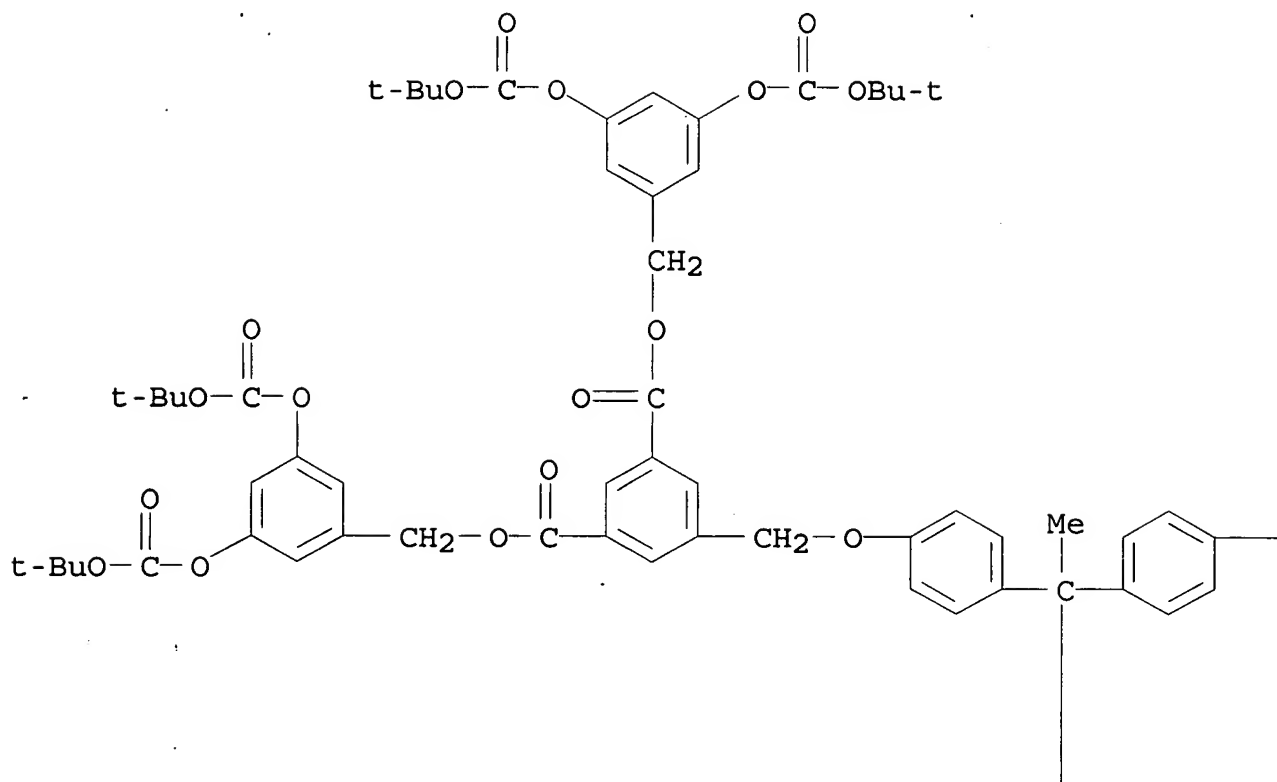
(dendrimer-based chem. amplified **resist** material for  
fabrication of DRAMs below 100 nm)

RN 267874-32-8 HCA

CN 1,3-Benzenedicarboxylic acid, 5,5',5'''-[ethylidynetris(4,1-phenyleneoxymethylene)]tris-, hexakis[[3,5-bis[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]methyl] ester (9CI) (CA INDEX NAME)

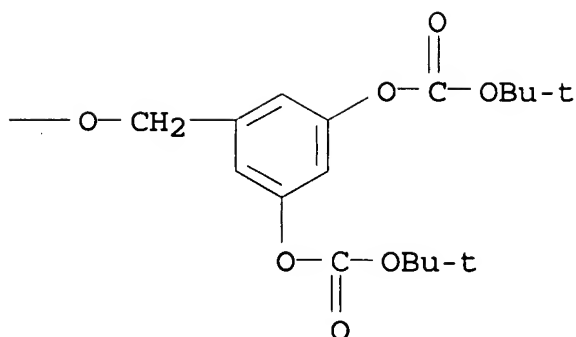


PAGE 1-A



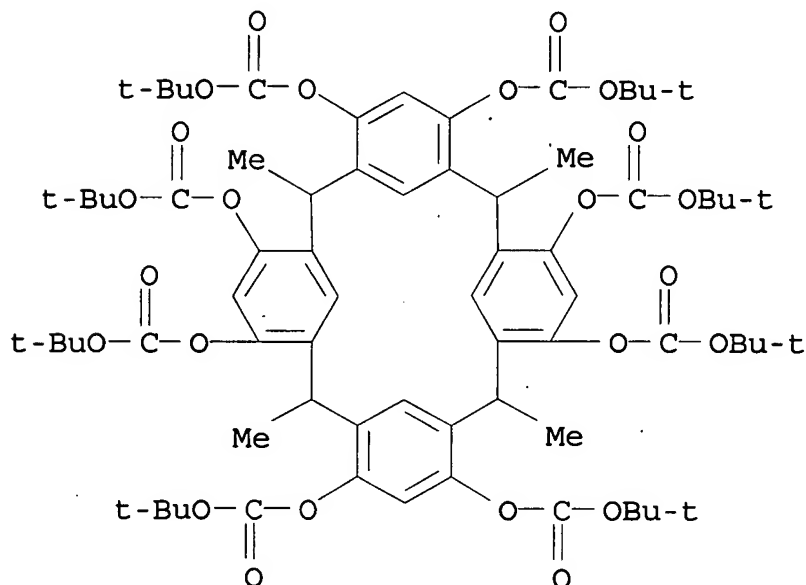


PAGE 2-B



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST dendrimer amplified **resist** tert butyl ester poly benzyl ether
- IT Memory devices  
(DRAM (dynamic random access); dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)
- IT **Resists**  
(chem. amplified; dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)
- IT Electron beam lithography  
(dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)
- IT Dendritic polymers  
(dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)
- IT 267874-31-7P **267874-32-8P** 267890-50-6P  
(dendrimer-based chem. amplified **resist** material for fabrication of DRAMs below 100 nm)
- IT 99-10-5, 3,5-Dihydroxybenzoic acid 26153-38-8,  
3,5-Dihydroxybenzaldehyde 200133-25-1 267663-15-0 267874-29-3  
267874-30-6  
(prepn. of dendrimer-based chem. amplified **resist** material using)

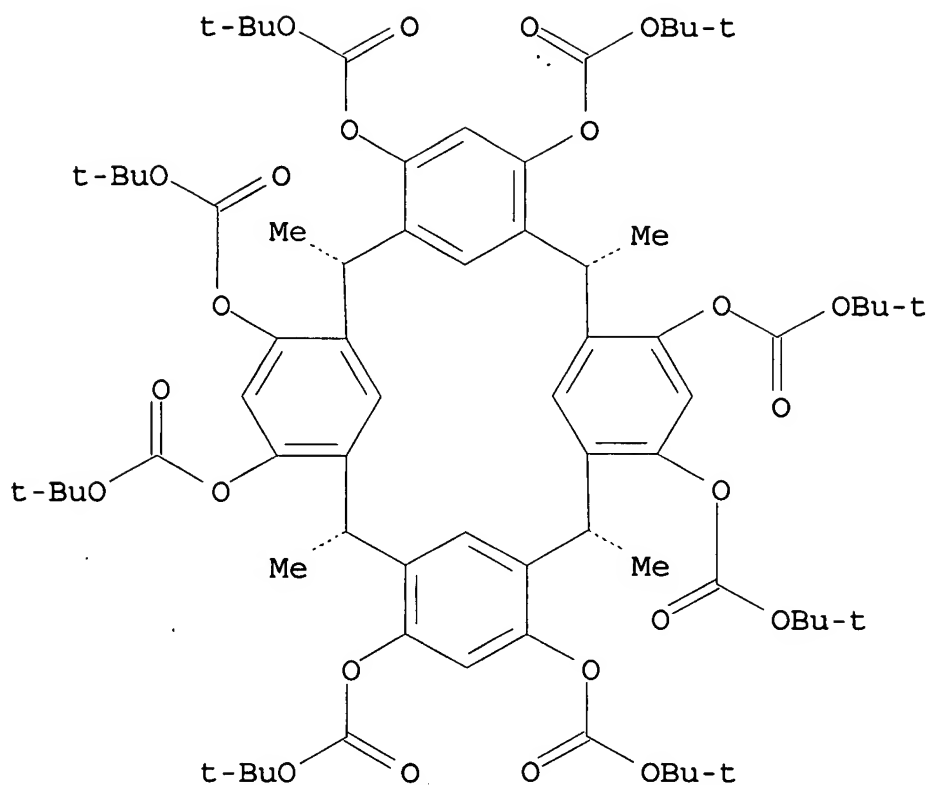
- 132:7560 Acid-decomposable group-containing calixarenes, calixresorcinarenes, and photosensitive composition for **resist**. Nishikubo, Tadaomi; Kameyama, Atsushi; Ota, Yoshihisa (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11322656 A 19991124 Heisei, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-146597 19980511.
- GI For diagram(s), see printed CA Issue.
- AB The compn. contains  $\geq 1$  calix(resorcin)arenes I ( $R_1, R_2 = H$ ,  $C_1-5$  alkyl;  $R_3 = H$ ,  $O_2CBu-t$ ,  $SiMe_3$ , cyclohexenyl;  $n = 1-3$ ;  $m = 4-12$ ) and a photo-acid generator. The compn. is useful as pos.-working chem. amplified **resists**.
- IT **250715-31-2P**  
(acid-decomposable group-contg. calixarenes or calixresorcinarenes for **photoresists**)
- RN 250715-31-2 HCA
- CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM C07C043-235  
ICS C07C069-33; C07F007-18; G03F007-039
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 25
- ST calixarene calixresorcinarene photosensitive compn **resist**;  
acid decomposable calixarene calixresorcinarene **photoresist**
- IT **Positive photoresists**  
(acid-decomposable group-contg. calixarenes or

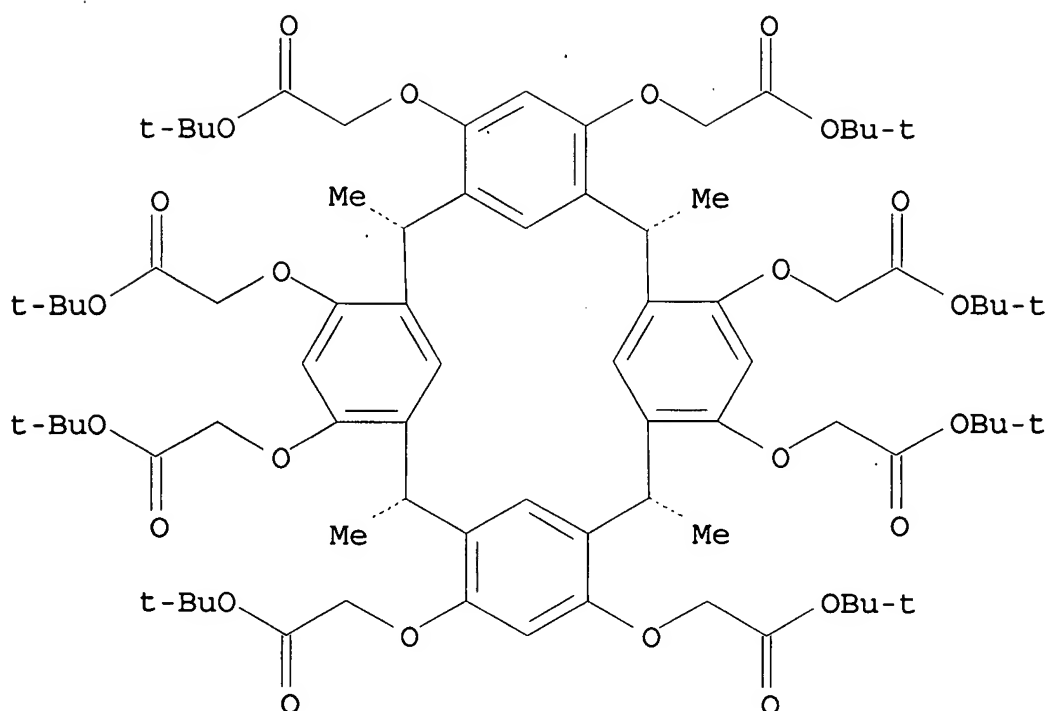
- calixresorcinarenes for **photoresists**)
- IT Metacyclophanes  
(calixarenes; acid-decomposable group-contg. calixarenes or calixresorcinarenes for **photoresists**)
- IT 108-46-3, 1,3-Benzenediol, reactions 123-63-7 1521-51-3,  
3-Bromocyclohexene 68971-82-4, p-tert-Butylcalix(8)arene  
250715-27-6 250715-28-7, p-Methylcalix(7)arene 250715-30-1,  
p-Methylcalix(8)arene  
(acid-decomposable group-contg. calixarenes or calixresorcinarenes for **photoresists**)
- IT 65338-98-9P, Calix[4]resorcinarene 68971-83-5P 160399-38-2P  
250715-26-5P **250715-31-2P** 250715-32-3P 250715-33-4P  
250715-34-5P 250715-35-6P 250715-36-7P 250715-37-8P  
250715-39-0P 250715-40-3P  
(acid-decomposable group-contg. calixarenes or calixresorcinarenes for **photoresists**)
- L70 ANSWER 22 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 131:293195 Novel dissolution inhibitors based on calixarene derivatives for use in chemical amplification **resists**. Ito, Hiroshi; Nakayama, Tomonari; Ueda, Mitsuru; Sherwood, Mark; Miller, Dolores (IBM Almaden Research Center, San Jose, CA, 95120, USA): Polymeric Materials Science and Engineering, 81, 51-52 (English) **1999**. CODEN: PMSEDG. ISSN: 0743-0515. Publisher: American Chemical Society.
- AB Calix[4]resorcinarenes were synthesized by condensing resorcinol with aldehydes (acetaldehyde, benzaldehyde, and 4-isopropylbenzaldehyde) and sepd. into C<sub>4v</sub> and C<sub>2v</sub>, isomers. All eight OH groups were protected with acid-labile groups such as tBOC and tBuOCOCH<sub>2</sub>. The protected calixarenes have been found to be excellent dissoln. inhibitors for use in chem. amplification **resists**.
- IT **246023-01-8P 246023-03-0P 246023-06-3P**  
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- RN 246023-01-8 HCA
- CN Carbonic acid, 2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN	246023-03-0	HCA
CN	Acetic acid, 2,2',2'',2''',2''',2''',2''',2''''-(2,8,14,20-tetramethylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl)octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)	

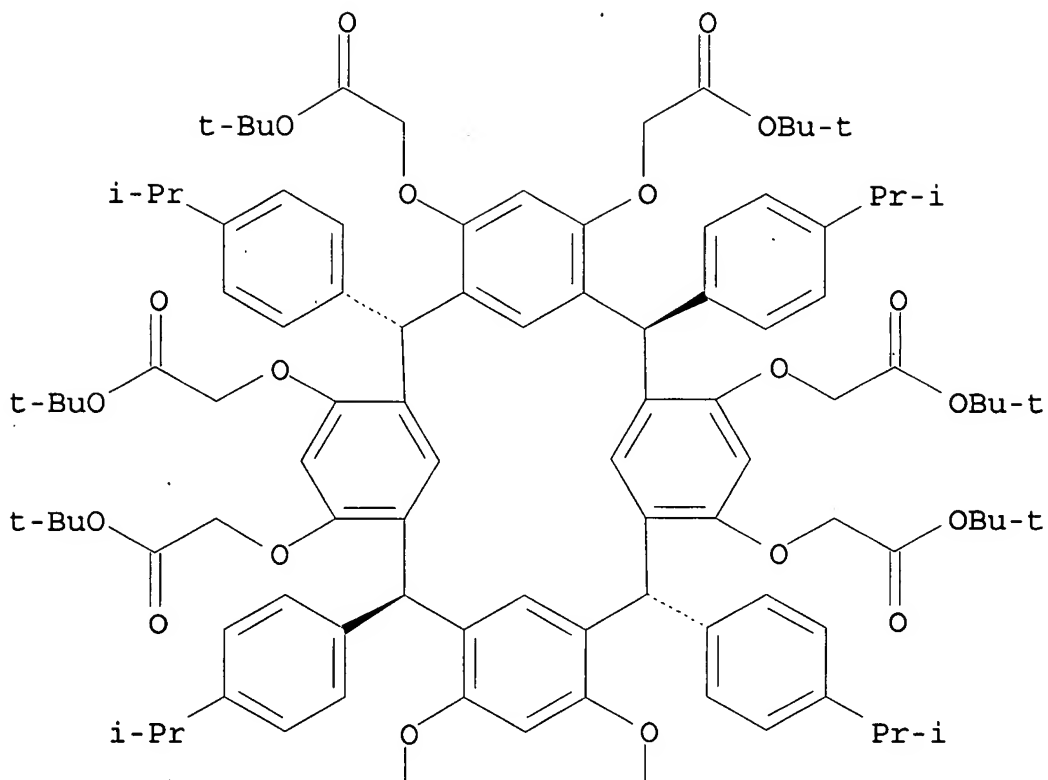
Relative stereochemistry.



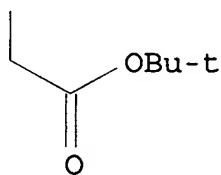
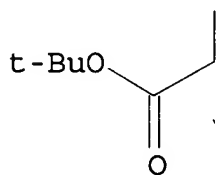
RN	246023-06-3	HCA
CN	Acetic acid, 2,2',2'',2''',2'''',2''''',2''''',2''''''-[ [2,8,14,20-tetrakis[4-(1-methylethyl)phenyl]pentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl]octakis(oxy)]octakis-, octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)	

Relative stereochemistry.

PAGE 1-A



PAGE 2-A

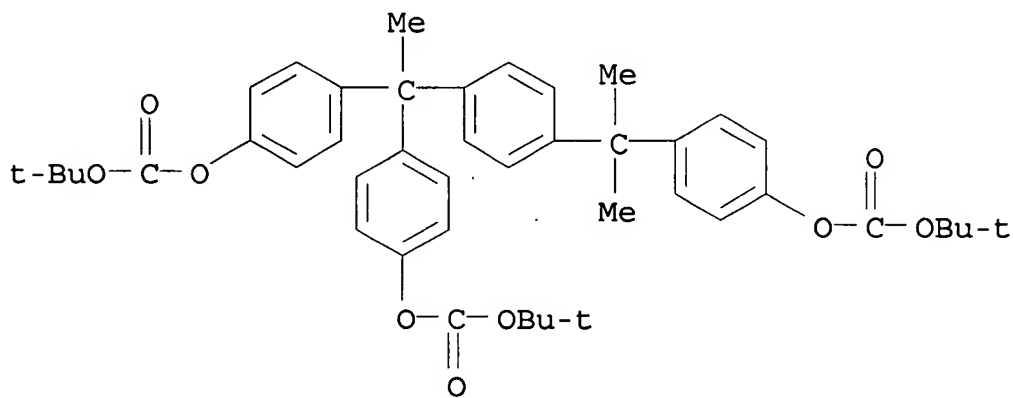


- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76
- ST dissoln inhibitor calixarene chem amplification **photoresist**
- IT Photolithography
- Photoresists**
- Semiconductor device fabrication  
 (novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT Dendritic polymers



- (novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 159296-87-4, 4-Hydroxystyrene-tert-butyl acrylate copolymer  
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 74410-61-0DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected  
145843-14-7DP, t-butoxycarbonyl- or t-butoxycabonylmethyl-protected  
**246023-01-8P 246023-03-0P 246023-04-1DP,**  
t-butoxycarbonyl- or t-butoxycabonylmethyl-protected  
**246023-06-3P 246024-56-6DP,** t-butoxycarbonyl- or  
t-butoxycabonylmethyl-protected  
(novel dissoln. inhibitors based on calix[4]resorcinarenes for use in chem. amplification **resists**)
- IT 75-07-0, Acetaldehyde, reactions 100-52-7, Benzaldehyde, reactions  
108-46-3, Resorcinol, reactions 122-03-2, 4-Isopropylbenzaldehyde  
5292-43-3, tert-Butyl bromoacetate 24424-99-5, Di-tert-butyl  
dicarbonate  
(prepn. of novel dissoln. inhibitors based on  
calix[4]resorcinarenes for use in chem. amplification  
**resists**)
- IT 74410-61-0P 74708-10-4P 145843-14-7DP, t-butoxycarbonyl- or  
t-butoxycabonylmethyl-protected 246023-04-1P 246023-05-2P  
246024-56-6P  
(prepn. of novel dissoln. inhibitors based on  
calix[4]resorcinarenes for use in chem. amplification  
**resists**)
- L70 ANSWER 23 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 130:330572 Radiation-sensitive resin composition useful as chemically  
amplified **resist**. Ohta, Yoshihisa; Matsuda, Daiichi;  
Yumoto, Yoshitsugu (JSR Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho  
JP 11109613 A 19990423 Heisei, 21 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1997-281078 19970930.
- AB The title resin compn. contains (a) a fullerene deriv. sol. in  
solvents for **resists**, (b) a radiation-sensitive  
acid-generator, and (c) either an acid-dissocg. group-protected  
resin which is insol. or slightly soln. in alkali and becomes  
alkali-sol. when the group is dissocd. or an alkali-sol. resin and  
an alkali soly.-controlling agent. The compn. may contain (a), (b),  
an alkali-sol. resin, and a compd. which cross-links the resin in  
the presence of acid. The compn. shows high photosensitivity and  
provides a high resoln. pattern with resoln.  $\leq 0.2 \mu\text{m}$  and  
good profile in edge roughness.
- IT 151533-21-0  
(soly.-controlling agent; **resist** compn. contg.  
fullerene deriv.)
- RN 151533-21-0 HCA
- CN Carbonic acid, [1-[4-[1-[4-[[1,1-dimethylethoxy)carbonyl]oxy]phenyl

] -1-methylethyl]phenyl]ethylidene]di-4,1-phenylene  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004  
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027; C08L101-00  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
ST **resist** fullerene acid generator; alkali soluble resin  
**resist**  
IT Aminoplasts  
(crosslinking agent; **resist** compn. contg. fullerene  
deriv.)  
IT **Resists**  
(**resist** compn. contg. fullerene deriv.)  
IT Fullerenes  
(**resist** compn. contg. fullerene deriv.)  
IT 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate  
103979-48-2 133710-62-0 138529-81-4,  
Bis(cyclohexylsulfonyl)diazomethane  
(acid generator; **resist** compn. contg. fullerene deriv.)  
IT 9011-05-6, MX 290 17464-88-9, Cymel 1174  
(crosslinking agent; **resist** compn. contg. fullerene  
deriv.)  
IT 24979-70-2, Poly(p-hydroxystyrene) 24979-74-6,  
p-Hydroxystyrene-styrene copolymer 59269-51-1D,  
Poly(hydroxystyrene), ethers 146958-39-6 153218-90-7  
155214-68-9, Poly(hydroxystyrene) tert-butyl carbonate 155382-83-5  
155944-50-6 164078-83-5 170501-65-2 170501-68-5 170501-71-0  
209545-11-9 223769-43-5  
(**resist** compn. contg. fullerene deriv.)  
IT 97-64-3, Ethyl 2-hydroxypropionate 84540-57-8, Propylene glycol  
methyl ether acetate  
(solvent; **resist** compn. contg. fullerene deriv.)  
IT 117458-06-7 151533-21-0

(soly.-controlling agent; **resist** compn. contg.  
fullerene deriv.)

L70 ANSWER 24 OF 65 HCA COPYRIGHT 2007 ACS on STN

130:304048 Positively-working photosensitive colored composition and color filter using same. Suzuki, Nobuo (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11095435 A 19990409 Heisei, 62 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-252177 19970917.

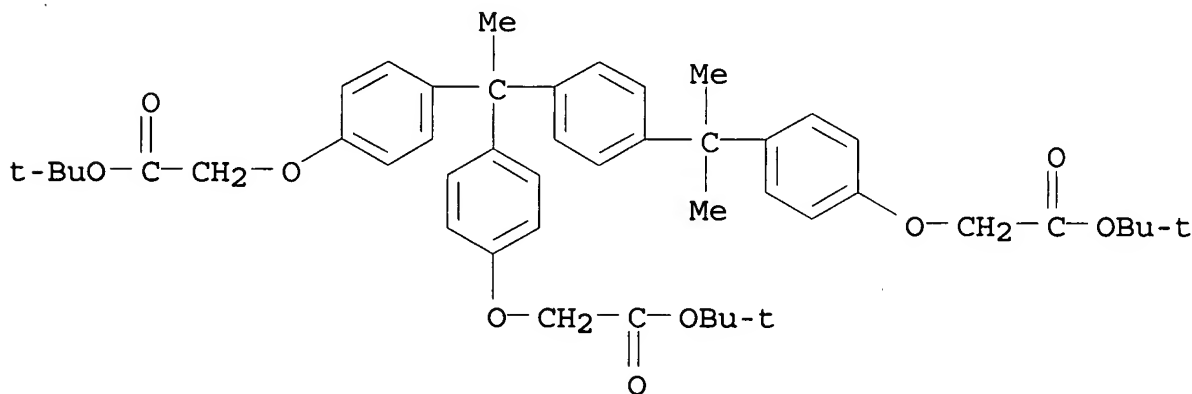
AB The title compn. contains (a) a resin insol. in water and sol. in aq. alk. solns., (b) a compd. generating acid under active ray or radiation irradiation, (c) a low-mol.-wt. acid-decomposable dissoln.-inhibiting compd. with mol. wt.  $\leq 3000$  which has acid-decomposable groups whose soly. in alk. developing solns. is increased by the action of acid, and (d) a colorant. The compn. may contain (a) a resin having groups which are decompd. by the action of acid to increase the soly. in alk. developing solns., (b) a compd. generating acid under active ray or radiation irradiation, (c) an org. basic compd., and (d) a colorant. A color filter using the compn. is also claimed. The compn. shows high photosensitivity and provides high quality patterns with good profile.

IT 153698-54-5

(acid decompn. inhibitor; in pos. working **photoresist** material contg. alkali-sol. resin or acid-decomposable resin for manuf. of color filter)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS C08L101-00; C09D201-00; G02B005-20; G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)

ST pos working photosensitive compn color filter; acid decompn  
inhibitor pos working **photoresist**; alkali soly acid  
decomposable compn

IT Optical filters  
Positive **photoresists**  
(pos. working **photoresist** material contg. alkali-sol.  
resin or acid-decomposable resin for manuf. of color filter)

IT 153698-54-5 153698-63-6 186493-32-3  
(acid decompn. inhibitor; in pos. working **photoresist**  
material contg. alkali-sol. resin or acid-decomposable resin for  
manuf. of color filter)

IT 56530-39-3 66003-78-9 124737-97-9  
(acid generator; in pos. working **photoresist** material  
contg. alkali-sol. resin or acid-decomposable resin for manuf. of  
color filter)

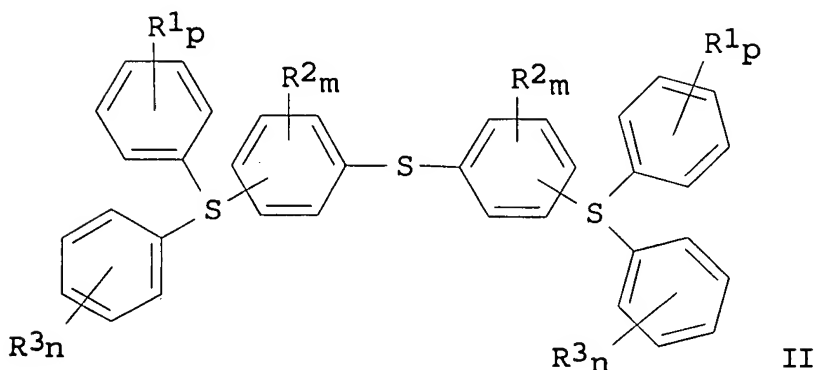
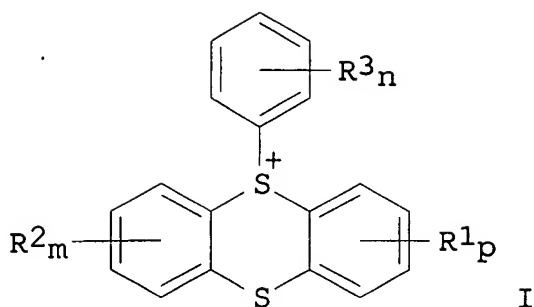
IT 101-80-4 484-47-9 1122-58-3  
(in pos. working **photoresist** material contg.  
alkali-sol. resin or acid-decomposable resin for manuf. of color  
filter)

IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 142952-62-3  
180337-31-9 196709-91-8 223473-73-2  
(pos. working **photoresist** material contg. alkali-sol.  
resin or acid-decomposable resin for manuf. of color filter)

L70 ANSWER 25 OF 65 HCA COPYRIGHT 2007 ACS on STN

129:296167 Positive photosensitive composition. Aoi, Toshiaki; Takita,  
Satoshi; Uenishi, Kazuya (Fuji Photo Film Co., Ltd., Japan). Eur.  
Pat. Appl. EP 869393 A1 19981007, 83 pp. DESIGNATED  
STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,  
MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW.  
APPLICATION: EP 1998-105753 19980330. PRIORITY: JP 1997-80666  
19970331; JP 1997-81075 19970331.

GI



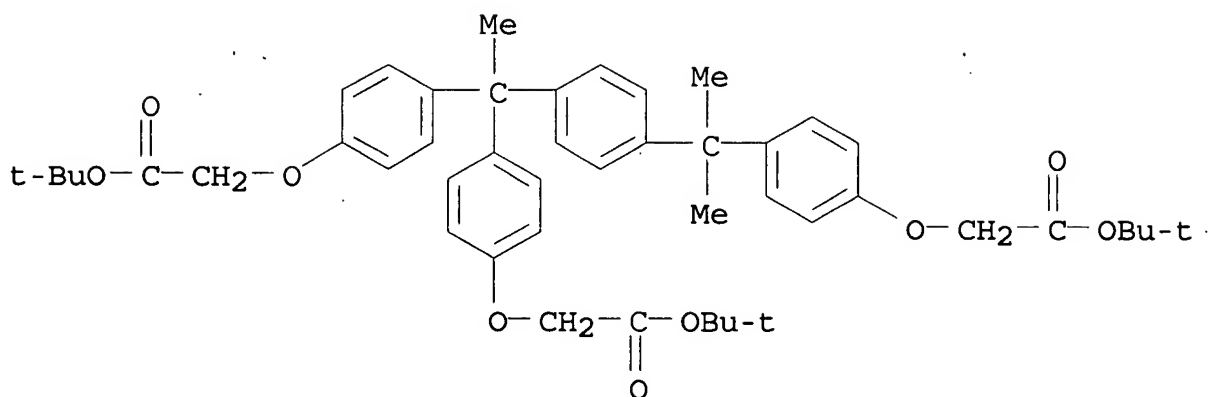
AB Provided is a pos. photosensitive compn. which has high photosensitivity, is capable of giving an excellent **resist** pattern, and changes little with time after exposure. The pos. photosensitive compn. comprises a resin having a group(s) capable of decomp. by the action of an acid to enhance soly. of the resin in an alk. developing soln. and a compd. represented by the formula I or II which is capable of generating a sulfonic acid upon irradiation with an actinic ray or a radiation wherein R1-3 each represents a hydrogen atom, an alkyl group, a cycloalkyl group, an alkoxy group, a hydroxy group, a halogen atom, or a group represented by -SR4, where R4 represents an alkyl group or an aryl group; X- represents the specific anion of a benzenesulfonic, naphthalenesulfonic, or anthracenesulfonic acid; and p, m, and n represents an integer of 1 to 3.

IT 153698-54-5

(prepn. and use in prepg. pos. **photoresists**)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST pos **photoresist** sulfonic acid generating agent  
 IT Positive **photoresists**  
     (contg. sulfonic acid-generating agents)  
 IT 214207-98-4 214207-99-5 214208-01-2 214208-03-4 214208-04-5  
 214208-06-7 214208-07-8 214208-08-9 214208-09-0 214208-11-4  
 214208-12-5 214208-14-7 214272-37-4 214272-39-6 214272-40-9  
     (pos. **photoresists** contg.)  
 IT 125325-82-8, p-(2-Tetrahydropyranyloxy)styrene-p-hydroxystyrene copolymer 142952-62-3, tert-Butoxycarbonylmethyloxystyrene-p-hydroxystyrene copolymer 158593-28-3, p-(1-Ethoxyethoxy)styrene-p-hydroxystyrene copolymer 186769-12-0, p-(1-Butoxyethoxy)styrene-p-hydroxystyrene copolymer  
     (pos. **photoresists** contg. sulfonic acid-generating agents and)  
 IT **153698-54-5** 153698-65-8 153698-70-5 153840-05-2  
 159293-87-5 214207-97-3 214208-05-6 214208-10-3 214208-16-9  
 214208-17-0 214272-35-2  
     (prepn. and use in prepg. pos. **photoresists**)

L70 ANSWER 26 OF 65 HCA COPYRIGHT 2007 ACS on STN

- 129:296072 A positive-working alkaline developable **photoresist** based on t-Boc-Calix[4]resorcinarene and a photoacid generator. Takeshi, Kazumasa; Nakayama, Ryuji; Ueda, Mitsuru (Department of Human Sensing and Functional Sensor Engineering, Graduate School of Engineering, Yamagata University, Yamagata, 992-8510, Japan). Chemistry Letters (9), 865-866 (English) 1998. CODEN: CMLTAG. ISSN: 0366-7022. Publisher: Chemical Society of Japan.  
 AB A pos. working **photoresist** based on octa-O-tert-Bu carbonated C-hexylcalix[4]resorcinarene (t-BOC-h-C4) and p-nitrobenzyl-9, 10-dimethoxy-anthracene-2-sulfonate (NDS) as a

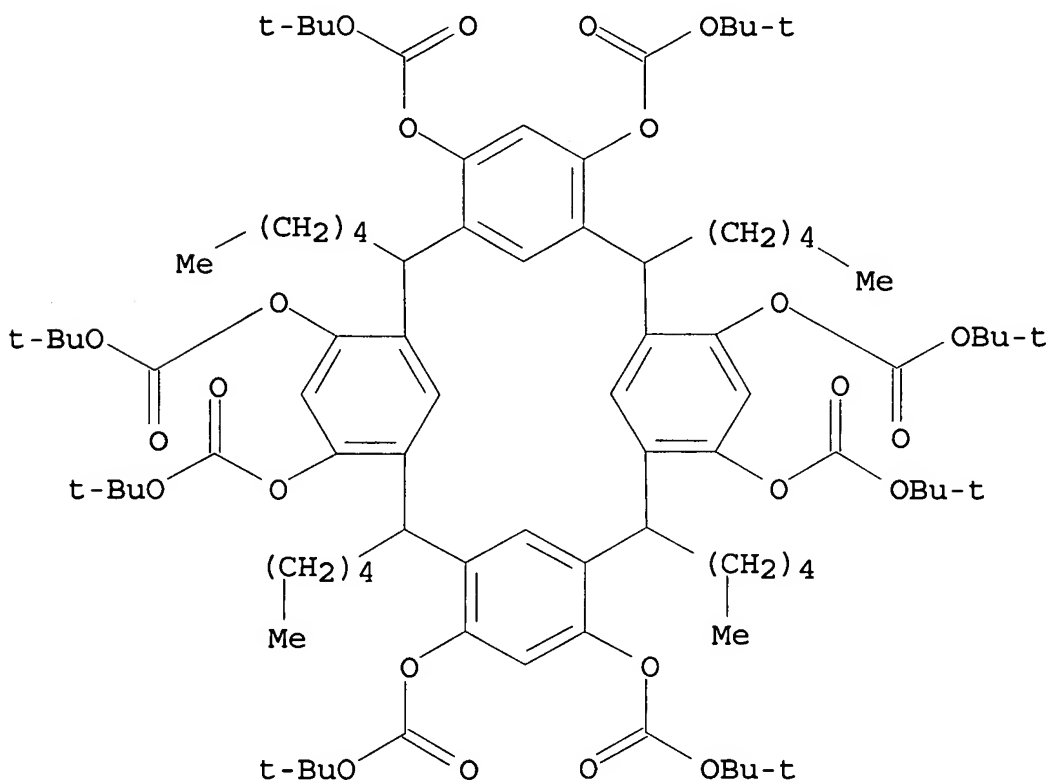
photoacid generator has been developed. The **photoresist** consisting of t-BOC-h-C4 (90 wt%) and NDS (10 wt%) showed a sensitivity of 24 mJ/cm<sup>2</sup> and a contrast of 8.1, when it was exposed to 365 nm light and postbaked at 90 °C for 2 min, followed by developing with a 1% aq. tetramethylammonium hydroxide (TMAH) soln. at room temp.

IT 214327-60-3

(pos.-working alk. developable **photoresist** based on calix[4]resorcinarene and photoacid generator)

RN 214327-60-3 HCA

CN Carbonic acid, 2,8,14,20-tetrapentylpentacyclo[19.3.1.13,7.19,13.115,19]octacos-1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-4,6,10,12,16,18,22,24-octayl octakis(1,1-dimethylethyl) ester, stereoisomer (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos lithog alk developable **photoresist**; calix resorcinarene photoacid generator **photoresist**

IT Photolysis

(in pos.-working alk. developable **photoresist** system based on calix[4]resorcinarene and photoacid generator)

IT **Photoresists**

(pos.-working alk. developable **photoresist** based on calix[4]resorcinarene and photoacid generator)

IT 121172-98-3, p-Nitrobenzyl-9, 10-dimethoxy-anthracene-2-sulfonate (photoacid generator; pos.-working alk. developable **photoresist** based on calix[4]resorcinarene and photoacid generator)

IT **214327-60-3**

(pos.-working alk. developable **photoresist** based on calix[4]resorcinarene and photoacid generator)

IT 115-11-7, formation (nonpreparative) 124-38-9, Carbon dioxide, formation (nonpreparative)

(reaction mechanism in pos.-working alk. developable **photoresist** system based on calix[4]resorcinarene and photoacid generator)

IT 52212-90-5, 9,10-Dimethoxy-anthracene-2-sulfonic acid (reaction mechanism in pos.-working alk. developable **photoresist** system based on calix[4]resorcinarene and photoacid generator)

L70 ANSWER 27 OF 65 HCA COPYRIGHT 2007 ACS on STN

129:101934 Radiation-sensitive resin composition. Suwa, Mitsuhiro; Iwasawa, Haruo; Kajita, Toru; Iwanaga, Shin-ichiro (Japan Synthetic Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP 849634 A1 **19980624**, 35 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1997-121963 19971212. PRIORITY: JP 1996-353866 19961219.

GI For diagram(s), see printed CA Issue.

AB A pos.-tone or neg.-tone radiation-sensitive resin compn. comprises (A) a photoacid generator represented by the formula I or II wherein R1, R2, R5, and R6 are an alkyl group; R3 and R7 are a hydroxyl group or -OR4 (wherein R4 is an org. group); A1- and A2- indicate a monovalent anion; a and c denote an integer of 4-7; and b and d denote an integer of 0-7. The pos.-tone radiation-sensitive resin compn. further comprises (B1) an acid-cleavable group-contg. resin or (B2) an alkali-sol. resin and an alkali soly. control agent and the neg.-tone radiation-sensitive resin compn. further comprises (C) an alkali-sol. resin and (D) a crosslinking agent. The resin compn. is highly sensitive and exhibits superior resoln. and pattern forming performance.

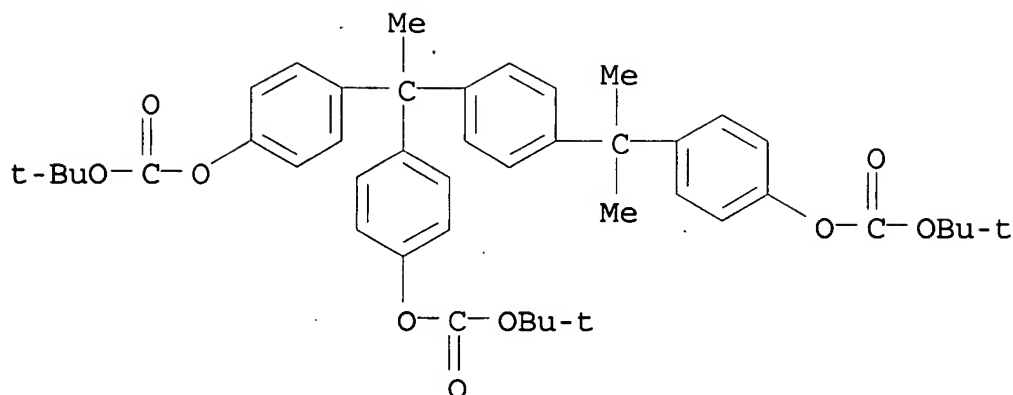
IT **151533-21-0**

(**photoresist** compns. contg. arom. photoacid generators and)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

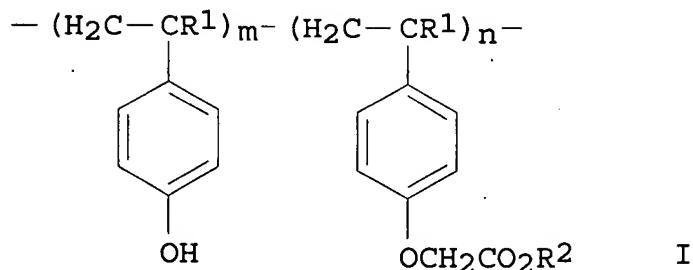




- IC ICM G03F007-004  
ICS G03F007-038
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **photoresist** pos arom photoacid generator
- IT **Photoresists**  
(contg. alkali-sol. resins, acid-cleavable resins, and arom. photoacid generators)
- IT Aminoplasts  
(**photoresist** compns. contg. alkali-sol. resins, arom. photoacid generators and)
- IT 196296-09-0 209482-13-3 209482-15-5 209482-17-7 209482-18-8  
(**photoresist** compns. contg. alkali-sol. resins and)
- IT 98-92-0, Nicotinic acid amide 102-82-9, Tributylamine 9011-05-6, MX290 17464-88-9, Cymel 1174  
(**photoresist** compns. contg. alkali-sol. resins, arom. photoacid generators and)
- IT 24979-70-2, Poly(p-hydroxystyrene) 59269-51-1D, Poly(hydroxystyrene), tert-butoxycarbonylated 117458-06-7 151533-21-0 195154-95-1 209482-08-6, 2-Hydroxypropyl acrylate-tetrahydropyranyl acrylate-tricyclodecanyl acrylate copolymer 209482-09-7 209482-11-1 209545-11-9  
(**photoresist** compns. contg. arom. photoacid generators and)
- L70 ANSWER 28 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 129:10629 **Photoresist** composition containing 4-phenylpyridine as additive. Niki, Hirokazu; Wakabayashi, Hiromitsu; Hayase, Rumiko; Oyasato, Naohiko; Onishi, Yasunobu; Sato, Kazuo; Chiba, Kenji; Hayashi, Takao (Kabushiki Kaisha Toshiba, Japan). U.S. US 5744281 A 19980428, 21 pp., Cont.-in-part of U.S. Ser. No. 781,512, abandoned. (English). CODEN: USXXAM. APPLICATION: US 1997-848747 19970501. PRIORITY: JP 1993-228969 19930914; JP

1994-125006 19940607; US 1994-302319 19940908; US 1997-781512  
19970109.

GI



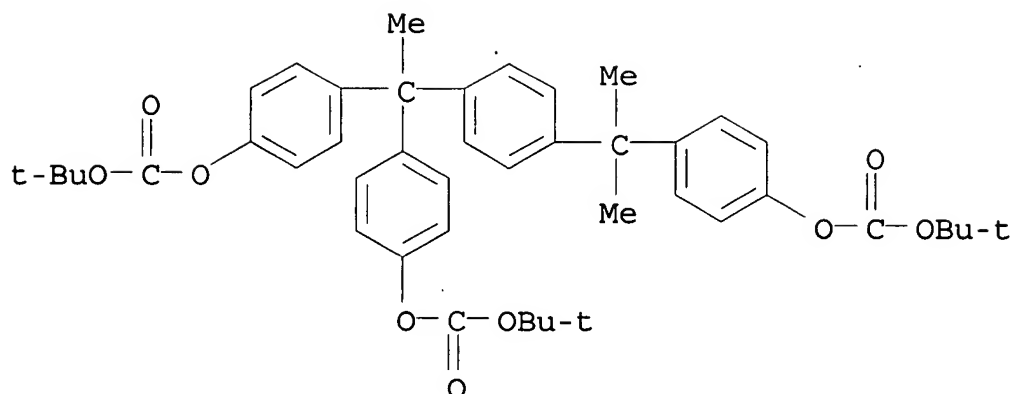
AB A **photoresist** compn. for forming a pattern, which comprises (a) a polymer represented by the formula I wherein R<sup>1</sup> is a hydrogen atom or a Me group, R<sup>2</sup> is a monovalent org. group, m is 0 or a pos. integer, n is a pos. integer, and m and n satisfying the inequality  $0.03 \leq n/(m+n) \leq 1$ , (b) a compd. capable of generating an acid when irradiated with light, and (c) 4-phenylpyridine, wherein the wt.-av. mol. wt. (M<sub>w</sub>) and the no.-av. mol. wt. (M<sub>n</sub>) of I satisfy the inequalities  $4000 \leq M_w \leq 50,000$  and  $1.10 \leq M_w/M_n \leq 2.50$  (M<sub>w</sub> and M<sub>n</sub> resp. represent value converted in styrene).

IT 151533-21-0

(pos. chem. amplified **photoresists** contg. hydroxystyrene copolymers, photoacid generators, nitrogen-contg. compds. and)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-0004

ICS G03F007-039

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **photoresist** chem amplified hydroxystyrene copolymer  
phenylpyridine

IT Positive **photoresists**

(chem. amplified; contg. hydroxystyrene copolymers, photoacid generators, and nitrogen-contg. compds.)

IT 66003-76-7 66003-78-9 121001-57-8 133789-86-3 167095-81-0  
(pos. chem. amplified **photoresists** contg.

hydroxystyrene copolymers, nitrogen-contg. compds. and)

IT 80-08-0, 4,4'-Diaminodiphenylsulfone 98-92-0, 3-Pyridinecarboxamide 101-77-9, 4,4'-Diaminodiphenylmethane 101-82-6, 2-Benzylpyridine 102-82-9, Tributylamine 108-75-8, 2,4,6-Trimethylpyridine 109-06-8, 2-Methylpyridine 110-86-1; Pyridine, uses 122-39-4, Diphenylamine, uses 142-08-5, 2(1H)-Pyridinone 366-18-7, 2,2'-Bipyridine 553-26-4, 4,4'-Bipyridine 702-16-9, 5-Butyl-2-methylpyridine 3978-81-2, 4-tert-Butylpyridine 4916-57-8, 1,2-Bis(4-pyridyl)ethane 24980-54-9, Styrene-2-vinylpyridine copolymer 25232-41-1, Poly(4-vinylpyridine) 36631-19-3, Triphenylimidazole 72762-00-6, 2-Hydroxypyridine 207395-43-5

(pos. chem. amplified **photoresists** contg.

hydroxystyrene copolymers, photoacid generators and)

IT 117458-06-7 **151533-21-0**

(pos. chem. amplified **photoresists** contg.

hydroxystyrene copolymers, photoacid generators, nitrogen-contg. compds. and)

IT 24979-70-2D, Poly(4-hydroxystyrene), tert-butoxycarbonylmethylated  
(pos. chem. amplified **photoresists** contg. photoacid generators, nitrogen-contg. compds. and)

L70 ANSWER 29 OF 65 HCA COPYRIGHT 2007 ACS on STN

128:328771 Positive-type photoresist compositions. Uenishi, Kazuya; Sakaguchi, Shinji; Fujinomori, Akira (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10097075 A 19980414 Heisei, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-125686 19970515. PRIORITY: JP 1996-146180 19960607.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

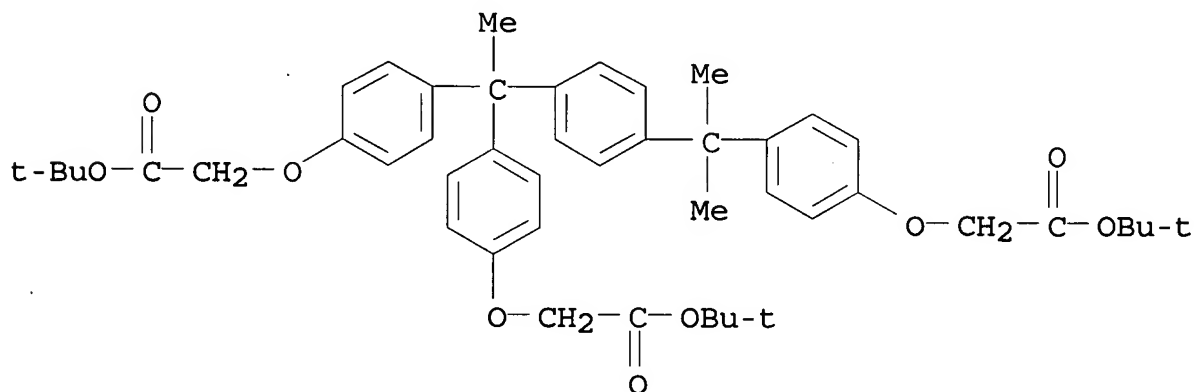
AB The title compns. comprise (A) CH<sub>2</sub>:C(Rx)C<sub>6</sub>H<sub>4</sub>OH copolymer with CH<sub>2</sub>:C(Rx)C<sub>6</sub>H<sub>4</sub>OC(Ra)(Rb)ORc and/or the copolymers contg. -C(Rd)(Re)ORfOC(Rg)(Rh)- crosslinking groups, (B) compds. generating acids upon irradiation of active light or radiation, and (C) I or II, wherein Rx = H, Me; Ra, Rb, Rd, Re, Rg, Rh = H, C1-8 alkyl, C3-6 cycloalkyl; Rc = C1-8 alkyl, C3-6 cycloalkyl, Q1; Rf = C1-6 alkylene, C3-6 cycloalkylene, Q2; Ri, Rj = H, C1-6 alkyl, C3-6 cycloalkylene; l + m = 100; m/(l + m) = 0.05-0.90; A = H, OH; E, G = Q3; R1-4 = H, XR13, halogen; R5, R6 = H, Me, Et, C1-2 haloalkyl; a-f, k-n = 0-3; g-j = 0-2; p = 1-3; D = direct bond, CO, S, SO<sub>2</sub>, CR5R6, -C(R5)(R6)C<sub>6</sub>H<sub>4</sub>C(R5)(R6)-; R8-12 = H, OH, CN, CO<sub>2</sub>H, XR13; R13 = C1-8 alkyl; X = direct bond, O, S, CO, O<sub>2</sub>C.

IT 153698-54-5P

(pos.-type photoresist compns.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039  
 ICS G03F007-004; H01L021-027; H05K003-06; C08F012-22; C08L025-18  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST **photoresist** pos type styrene deriv polymer  
 IT **Photoresists**  
 (pos.-type **photoresist** compns.)  
 IT 19361-97-8 31796-20-0 41580-58-9 56530-39-3 66003-78-9  
 142096-70-6 153698-46-5 153698-67-0 177786-97-9 199432-75-2  
 206861-49-6 206861-50-9 206861-52-1 206861-53-2 206861-54-3  
 (pos.-type **photoresist** compns.)  
 IT 153698-54-5P 153698-63-6P 153698-65-8P 189103-11-5P  
 189103-13-7P 189103-14-8P 189103-15-9P 206861-55-4P  
 (pos.-type **photoresist** compns.)  
 IT 107375-96-2P 110726-28-8P 110726-30-2P 110726-34-6P  
 113629-59-7P 147079-30-9P 147079-31-0P 147079-32-1P  
 147079-33-2P 147079-34-3P 147079-35-4P 147079-36-5P  
 (pos.-type **photoresist** compns.)  
 IT 24979-70-2, Poly(4-hydroxystyrene) 24979-74-6,  
 p-Hydroxystyrene-styrene copolymer 87188-51-0 125325-82-8  
 133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer  
 142952-62-3, p-(tert-Butoxycarbonylmethoxy)styrene-p-hydroxystyrene  
 copolymer 158593-28-3 171429-59-7, p-Acetoxystyrene-p-  
 hydroxystyrene copolymer 196709-91-8 199432-81-0 206861-57-6  
 206861-58-7 206861-60-1 206861-61-2 206861-62-3  
 (pos.-type **photoresist** compns.)  
 IT 50-00-0, Formaldehyde, reactions 80-05-7, Bisphenol A, reactions  
 80-09-1, Bisphenol S 95-48-7, o-Cresol, reactions 108-39-4,  
 reactions 108-95-2, Phenol, reactions 110-87-2,  
 3,4-Dihydro-2H-pyran 131-55-5, 2,2',4,4'-Tetrahydroxybenzophenone  
 576-26-1, 2,6-Dimethylphenol 611-99-4, 4,4'-Dihydroxybenzophenone  
 623-05-2, 4-Hydroxymethylphenol 3957-22-0 4397-14-2,  
 4-Hydroxymethyl-2,6-dimethylphenol 4466-18-6,  
 $\alpha,\alpha',\alpha''$ -Tris(4-hydroxyphenyl)-1,3,5-  
 triisopropylbenzene 5292-43-3, tert-Butyl bromoacetate  
 5359-04-6, p-Isopropenylacetophenone 24424-99-5, Di-tert-butyl  
 dicarbonate 76937-83-2,  $\alpha,\alpha,\alpha',\alpha',\alpha'$   
 ', $\alpha''$ -Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene  
 87771-42-4, Ethanone, 1-[3-(1-methylethenyl)phenyl]- 148452-55-5  
 153698-47-6, Cumyl bromoacetate  
 (pos.-type **photoresist** compns.)

L70 ANSWER 30 OF 65 HCA COPYRIGHT 2007 ACS on STN

127:285943 Positive-working **photoresist** composition using  
 specific alkali-soluble resin. Tan, Shiro; Aoso, Toshiaki;  
 Yamanaka, Hitoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai

Tokkyo Koho JP 09236920 A 19970909 Heisei, 47 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-41689 19960228.

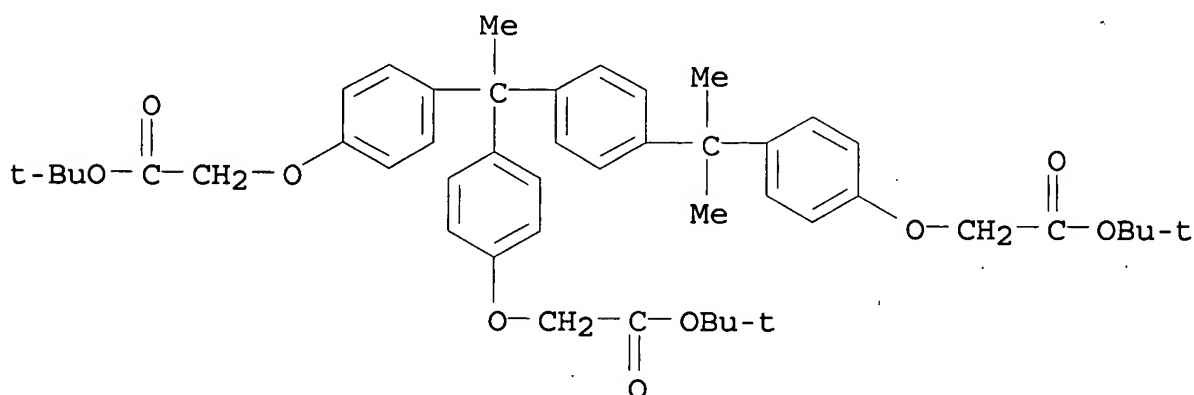
AB The title compn. contains (a) a resin with wt. av. mol. wt. (Mw) 4000-80,000 and mol. wt. distribution Mw/Mn = 1.6-4.0 (Mn = no. av. mol. wt.) which has  $\geq 1$  acid-decomposable group selected from acetal and silyl ether groups and of which the soly. in alk. developing solns. increases by the action of acids, (b) a compd. generating an acid upon irradi., (c) a solvent, and (d) an optional non-polymer-type dissoln. inhibitor which has  $\geq 1$  selected from tert-alkyl ester and tert-alkyl carbonate groups and of which the soly. in alk. aq. solns. increases by the action of acids. The compn. shows high sensitivity and storage stability, and provides high resoln. patterns with good profile and the sensitivity and the profile. Thus, p-hydroxystyrene-styrene copolymer of which 20% of the OH groups were tert-butoxy-1-ethylated, p-Me<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>(SO<sub>2</sub>)<sub>2</sub>Ph, and an org. basic compd. were dissolved in propylene glycol monoethyl ether acetate to give a **resist** soln.

IT 153698-54-5P

(dissoln. inhibitor; **photoresist** compn. contg. alkali sol. polymer with acetal or silyl ether group)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

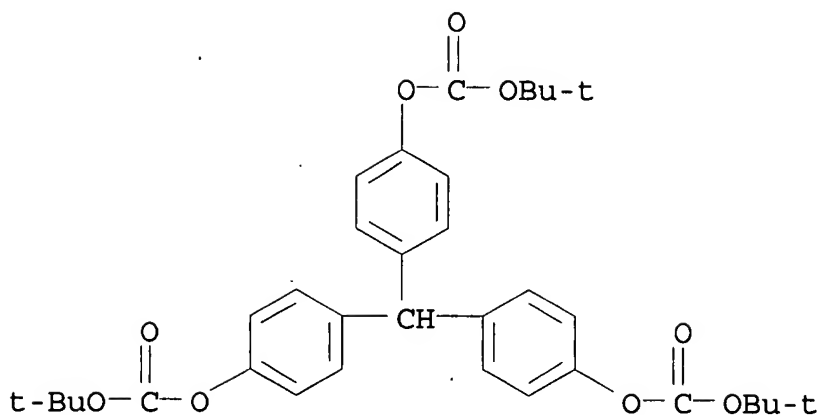
ICS G03F007-004; G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37

ST **photoresist** compn polyhydroxystyrene silyl ether deriv; acetal deriv polyhydroxystyrene **photoresist**; dissoln inhibitor polyhydroxy compd ester

- IT Positive **photoresists**  
(**photoresist** compn. contg. alkali sol. polymer with acetal or silyl ether group)
- IT 153698-54-5P 153698-63-6P  
(dissoln. inhibitor; **photoresist** compn. contg. alkali sol. polymer with acetal or silyl ether group)
- IT 75-77-4DP, Trimethylsilyl chloride, ether with hydroxystyrene polymer 926-02-3DP, tert-Butyl vinyl ether, ether with hydroxystyrene polymer 24979-70-2DP, Poly(p-hydroxystyrene), ethers 24979-74-6DP, p-Hydroxystyrene-styrene copolymer, ethers  
(**photoresist** compn. contg. alkali sol. polymer with acetal or silyl ether group)
- L70 ANSWER 31 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 126:270251 Design of high performance chemically amplified **resist**. Niinomi, Takaaki; Tomiyasu, Hiroshi; Kameyama, Yasuhiro; Tsukamoto, Michinori; Tanaka, Yuki; Fujita, Jun; Shimomura, Satoshi; Ochiai, Tameichi (Yokohama Research Center, Mitsubishi Chemical Corporation, Yokohama, 227, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 2724(Advances in Resist Technology and Processing XIII), 174-185 (English) 1996. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.
- AB The lithog. performance of chem. amplified pos. **resists** have nearly reached at the level of application to quarter-micron level with regard to their resoln. and sensitivity. However, it is hard to say that the problem of Post Exposure Delay (PED), which contains formation of "T-top" shape or "foot" profiles, has completely solved. We studied structure effect of both a dissoln. inhibitor and a protecting group on the problem. It was shown that a **resist** film having a dissoln. inhibitor derived from trisphenol loses less amt. of acid by evapn. compared with one having bisphenol type dissoln. inhibitor. With regard to easiness of cleavage of the protecting group, IR measurement has confirmed that the dissocn. of t-BOC occurs during PEB whereas that of THP occurs during exposure. MO calcn. showed that acetal group can be protonated easier than carbonate group and that both of them will have no barrier to cleave after protonation. Based on the above findings, we have obtained the high performance **resist** by applying these findings.
- IT 153041-55-5  
(as dissoln. inhibitor losing less amt. of acid by evapn. for high performance chem. amplified **resist**)
- RN 153041-55-5 HCA
- CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST design high performance chem amplified **resist**; lithog **photoresist** trisphenol dissoln inhibitor
- IT **Resists**  
(design of high performance chem. amplified **resist**)
- IT Lithography  
(high performance chem. amplified **resist** design for)
- IT 117458-06-7  
(as dissocn. prohibiter used in studying acid losing amt. for high performance chem. amplified **resist**)
- IT 153041-55-5  
(as dissoln. inhibitor losing less amt. of acid by evapn. for high performance chem. amplified **resist**)
- IT 110-87-2D, reaction product with polyvinyl phenol 24424-99-5D, Di-tert-butyl-di-carbonate, reaction product with polyvinyl phenol 59269-51-1D, Polyvinyl phenol, reaction product with di-tert-butyl-di-carbonate or 3,4-dihydropyran  
(used in studying acid losing amt. for high performance chem. amplified **resist**)
- IT 106-44-5D, p-Cresol, tetrahydropyranyl, or ethoxyethyl-, or di-tert-butyl-di-carbonate-substituted  
(used in studying protonation easiness for high performance chem. amplified **resist**)
- L70 ANSWER 32 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 126:150507 Chemically amplified positive **resist** composition.  
Yamanaka, Tsukasa; Aoai, Toshiaki; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 747768 A2 19961211, 81 pp. DESIGNATED STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1996-109089 19960605. PRIORITY: JP 1995-138295 19950605; JP 1996-66665 19960322.
- AB Disclosed is a chem. amplified pos. **resist** compn. which



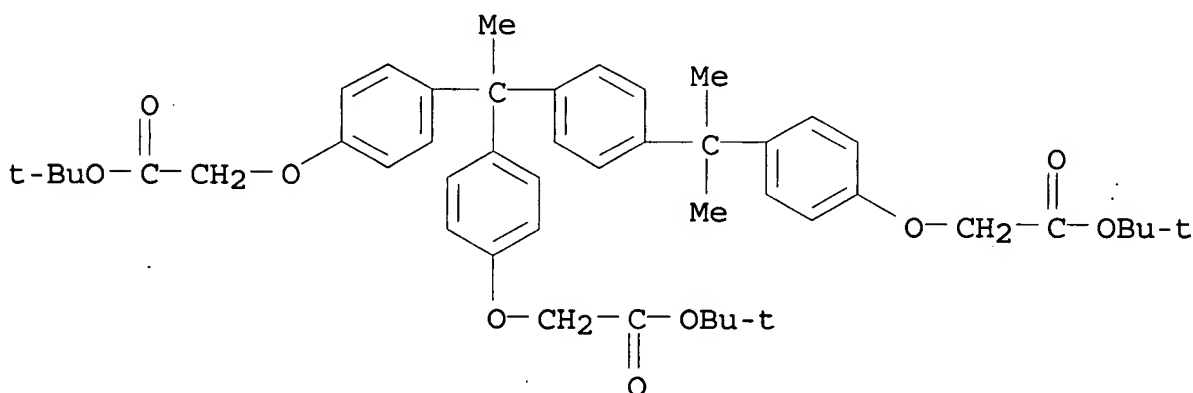
comprises (A) a compd. which contains at least one group selected from tert-alkyl ester groups and tert-alkyl carbonate groups and is capable of increasing soly. of the compd. in an alkali aq. soln. by the action of an acid, (B) a compd. which contains at least one group selected from acetal groups and silyl ether groups and is capable of increasing soly. of the compd. in an alkali aq. soln. by the action of an acid, (C) a compd. which is capable of generating an acid by irradiation with an active ray or radiation, and (D) an org. basic compd. The **resist** compn. has high resolving power and forms a satisfactory pattern free from undergoing sensitivity decrease, T-top formation, and change in line width which are caused by post exposure bake.

IT 153698-54-5

(resin dissoln. inhibitor for chem. amplified pos. photoresist compns.)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST chem amplification pos **resist** acetal compd; org base chem amplification pos **resist**

IT Positive **photoresists**

(chem. amplified; contg. compds. contg. tert-alkyl and acetal groups and org. bases)

IT 24979-70-2, p-Hydroxystyrene, homopolymer 24979-74-6,

p-Hydroxystyrene; styrene copolymer

(alkali-sol. binder for chem. amplified pos. **photoresist** compns.)

IT 101-80-4 484-47-9, 2,4,5-Triphenylimidazole 1122-58-3,

## 4-Dimethylaminopyridine

(chem. amplified pos. **photoresist** compns. contg.)

IT 19361-97-8 66003-78-9, Triphenylsulfonium triflate 124247-04-7  
124737-97-9 168697-66-3

(photoacid generator for chem. amplified pos. **photoresist** compns.)

IT 142952-62-3, p-Hydroxystyrene; p-(tert-butoxy-carbonylmethoxy)styrene copolymer **153698-54-5**  
153698-63-6 180337-31-9 181215-93-0, p-Hydroxystyrene;  
p-(tert-butoxy-1-methylethoxy)styrene copolymer 186493-32-3  
(resin dissoln. inhibitor for chem. amplified pos. **photoresist** compns.)

L70 ANSWER 33 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:342920 Radiation-sensitive resin composition with wide defocus latitude. Sakaguchi, Shinji; Kato, Kunimasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08227160 A **19960903** Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-32571 19950221.

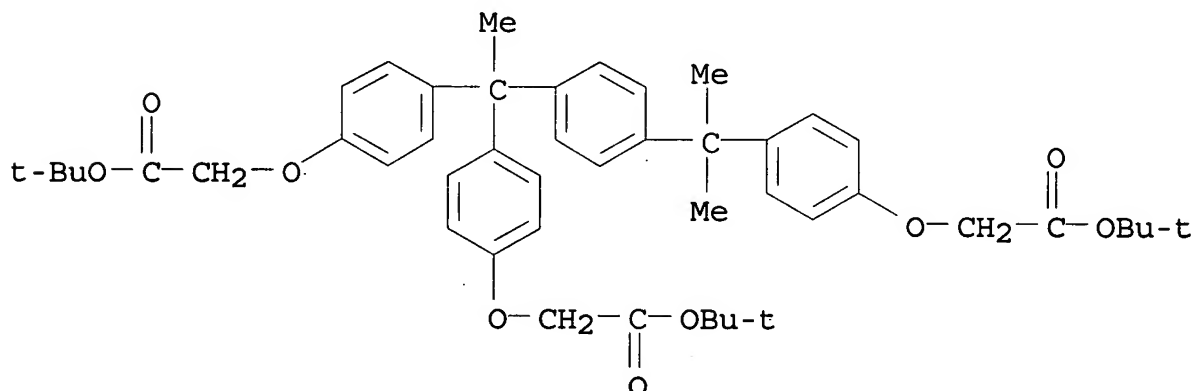
AB The compn. contg. a water-insol. alkali-sol. resin and a radiation-sensitive compd. shows a R-M characteristic curve [R ( $\mu\text{m/s}$ ) = dissoln. rate of the compn. upon development with an aq. soln. of  $\text{Me}_4\text{NOH}$  (2.38 wt.%) at  $23^\circ$  and M = relative concn. of the remaining radiation-sensitive compd.] which satisfies dM value  $\leq 0.1$  where dM is the difference between M when R = 0.02  $\mu\text{m/s}$  and M when R = 0.002  $\mu\text{m/s}$ . The compn. shows high resoln. and sensitivity and have wide defocus latitude.

IT **153698-54-5**

(radiation-sensitive resin compn. with wide defocus latitude)

RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-36  
ICS G03F007-022

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation sensitive resin compn; **resist** radiation sensitive

IT **Resists**  
(radiation-sensitive, radiation-sensitive resin compn. with wide defocus latitude)

IT 2395-97-3 110726-28-8 111928-10-0 **153698-54-5**  
153698-63-6 158859-36-0 183905-26-2 183905-27-3  
(radiation-sensitive resin compn. with wide defocus latitude)

L70 ANSWER 34 OF 65 HCA COPYRIGHT 2007 ACS on STN

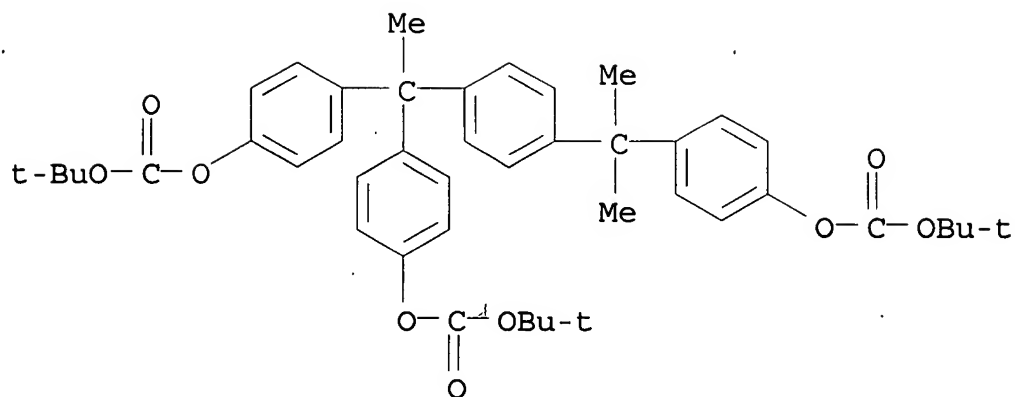
125:342905 Positive- and negative-working radiation-sensitive resin compositions. Oota, Yoshihisa; Natsui, Tooru; Makita, Minoru; Yamachika, Mikio (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08211598 A **19960820** Heisei, 21 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-39420 19950206.

AB The title pos.-working resin compns. contain (A) a thiosulfonate compd.  $XS(:O)2SY$  or  $X(:O)2SZSS(:O)2Y$  [X, Y = (substituted) monovalent non-cyclic hydrocarbon, cycloalkyl, aryl, aralkyl, hetero atom-contg. other monovalent group; Z =  $(CH_2)_n$  (n = 0 to 6),  $(CH_2)_mC(:O)(CH_2)_m$ ,  $(CH_2)_mC(:N_2)(CH_2)_m$  (m = 0 to 2)] and either (B) an acid-dissocg. group-protected resin insol. or slightly sol. in alkali, which becomes alkali-sol. when the group is dissocd., or (C) an alkali-sol. resin and alkali-soly.-controlling agent. The neg.-working compns. contain the thiosulfonate compd., an alkali-sol.resin, and a compd. which can crosslink the resin in the presence of an acid. The compns. show good processability in post exposure time delay and provide high resoln. patterns with high sensitivity and good profile. Thus, a pos.-working **resist** comprised S-phenylbenzene thiosulfonate and poly(hydroxystyrene) protected partially with tert-butoxycarbonyl group.

IT **151533-21-0**  
(alkali-soly.-controlling agent; radiation-sensitive **resist** compn. contg. thiosulfonate)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy) carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



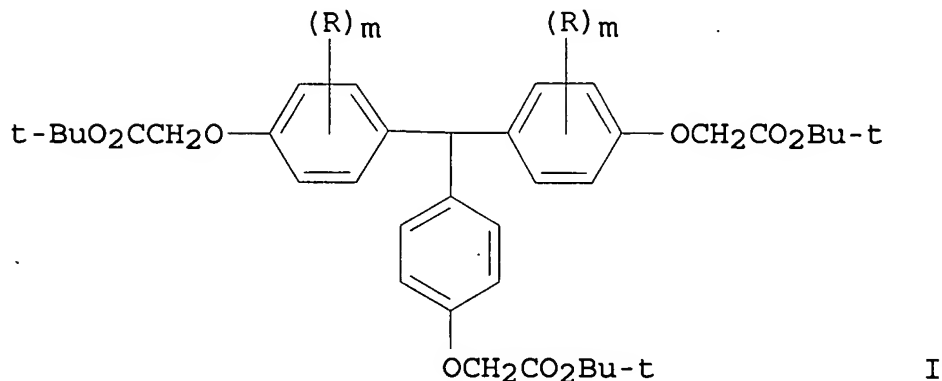
- IC ICM G03F007-004  
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 37
- ST **resist** radiation sensitive thiosulfonate
- IT **Resists**  
(radiation-sensitive, radiation-sensitive **resist** compn. contg. thiosulfonate)
- IT 9011-05-6  
(MX 290, crosslinking agent; radiation-sensitive **resist** compn. contg. thiosulfonate)
- IT 117458-06-7 151533-21-0  
(alkali-soly.-controlling agent; radiation-sensitive **resist** compn. contg. thiosulfonate)
- IT 17464-88-9, Cymel 1174  
(crosslinking agent; radiation-sensitive **resist** compn. contg. thiosulfonate)
- IT 1212-08-4, S-Phenylbenzene thiosulfonate 2225-23-2 2949-92-0,  
S-Methyl-methanethiosulfonate 3866-79-3 4837-39-2 16601-02-8  
(radiation-sensitive **resist** compn. contg. thiosulfonate)
- IT 24979-74-6, p-Hydroxystyrene-styrene copolymer 59269-51-1D,  
Polyhydroxystyrene, butoxycarbonylmethyl ethers 155214-68-9  
183451-91-4  
(radiation-sensitive **resist** compn. contg. thiosulfonate)

L70 ANSWER 35 OF 65 HCA COPYRIGHT 2007 ACS on STN

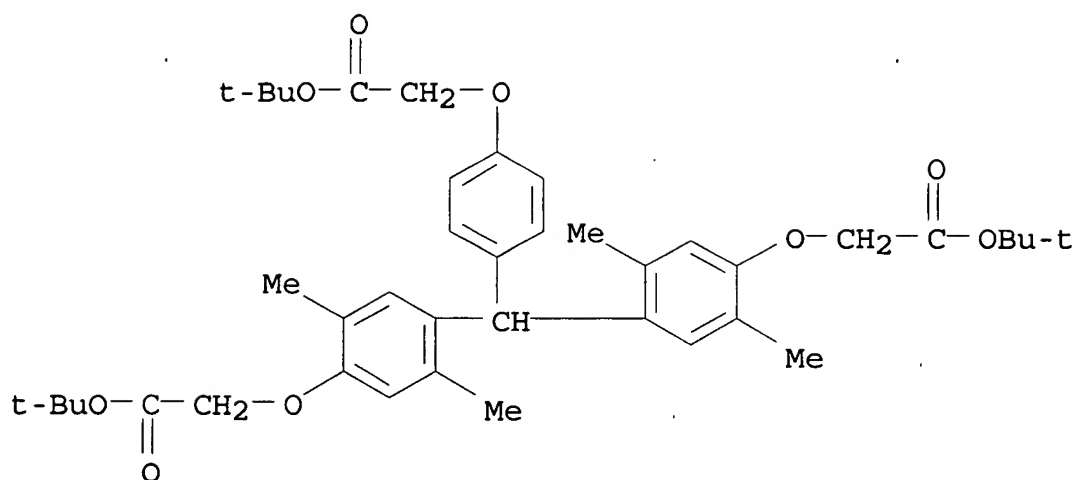
125:261267 Bis(4-tert-butoxycarbonylmethoxy-2,5-dimethylphenyl)methyl-4-tert-butoxycarbonylmethoxybenzene derivative for dissolution inhibitor of three-component **resist**. Watanabe, Atsushi; Ishihara, Toshinobu; Yagihashi, Fujio (Shinetsu Chemical Industry

Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08193054 A  
 19960730 Heisei, 4 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1995-20955 19950113.

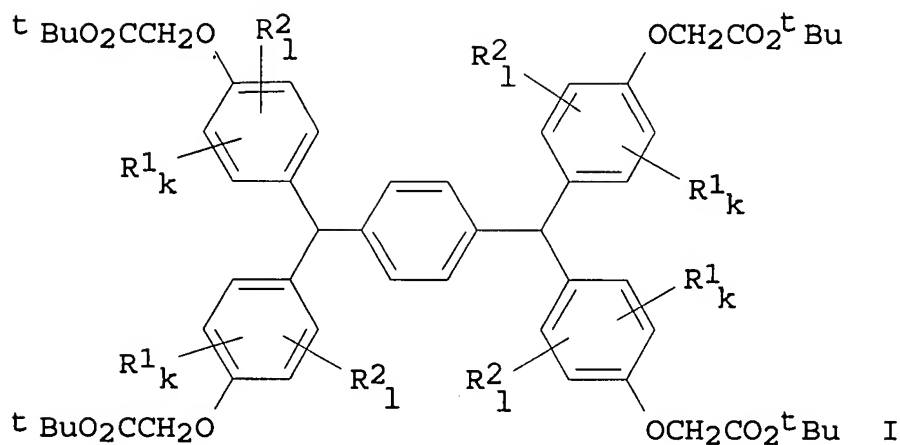
GI



- AB The deriv. is represented by I (R = alkyl; m = an integer of 0-4).  
 The deriv. shows good soly. toward macromol. compds. in a  
 pos.-working three-component **resist**, and is useful for  
 dissoln. inhibitor of the **resist**.
- IT **182252-62-6P**  
 (prepn. of di-Ph methylbenzene deriv. for dissoln. inhibitor of  
 three-component pos.-working **resist**)
- RN 182252-62-6 HCA
- CN Acetic acid, 2,2'-[[[4-[2-(1,1-dimethylethoxy)-2-  
 oxoethoxy]phenyl]methylene]bis[(2,5-dimethyl-4,1-phenylene)oxy]]bis-  
 , bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM C07C069-712  
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 25
- ST **resist** dissoln inhibitor diphenyl methylbenzene; pos  
working **resist** dissoln inhibitor
- IT **Resists**  
(di-Ph methylbenzene deriv. for dissoln. inhibitor of  
three-component pos.-working **resist**)
- IT 107-59-5, tert-Butyl chloroacetate 168766-36-7  
(in prepn. of di-Ph methylbenzene deriv. for dissoln. inhibitor  
of three-component pos.-working **resist**)
- IT **182252-62-6P**  
(prepn. of di-Ph methylbenzene deriv. for dissoln. inhibitor of  
three-component pos.-working **resist**)
- L70 ANSWER 36 OF 65 HCA COPYRIGHT 2007 ACS on STN  
125:261265 1,4-Bis[bis(4-tert-butoxycarbonylmethoxyphenyl)methyl]benzene and its derivative for dissolution inhibitor of **resist**  
composition. Watanabe, Atsushi; Ishihara, Toshinobu; Yagihashi, Fujio (Shinetsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08193052 A **19960730** Heisei, 4 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-20953 19950113.
- GI



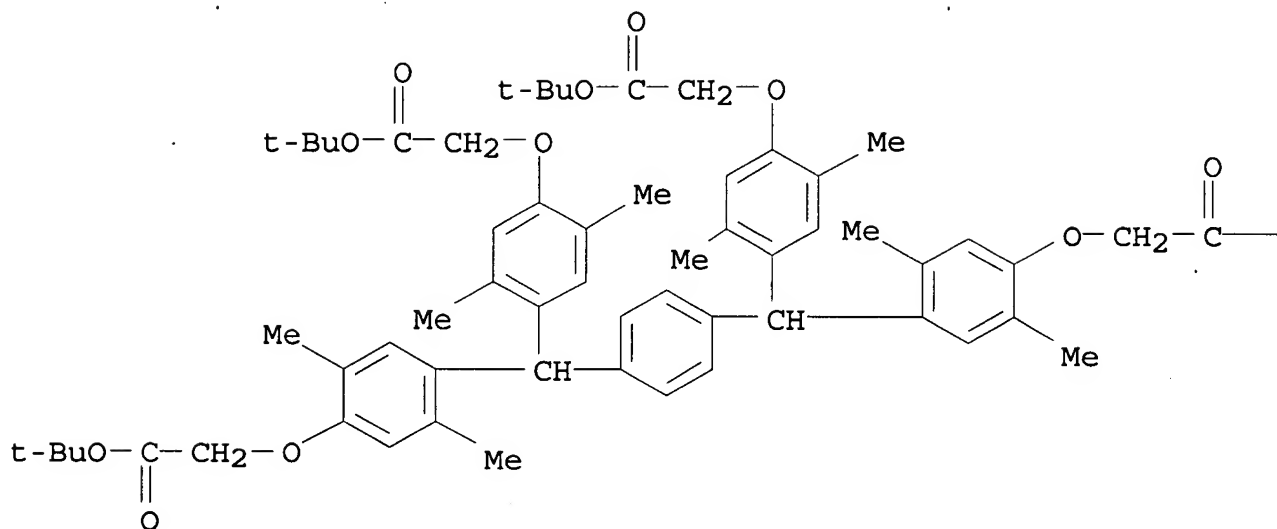
AB The 1,4-bis[bis(4-tert-butoxycarbonylmethoxyphenyl)methyl]benzene and its deriv. are I ( $R_1$ -2 = alkyl;  $k$  = an integer of 0-4,  $l$  = an integer of 0-2,  $k + l \leq 4$ ). The claimed compd. shows good soly. toward macromol. compds. in pos.-type **resist**, and is useful for dissoln. inhibitor.

IT **177983-92-5P 182216-32-6P 182216-34-8P**  
(prepn. of 1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. **resist**)

RN 177983-92-5 HCA

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(2,5-dimethyl-4,1-phenylene)oxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

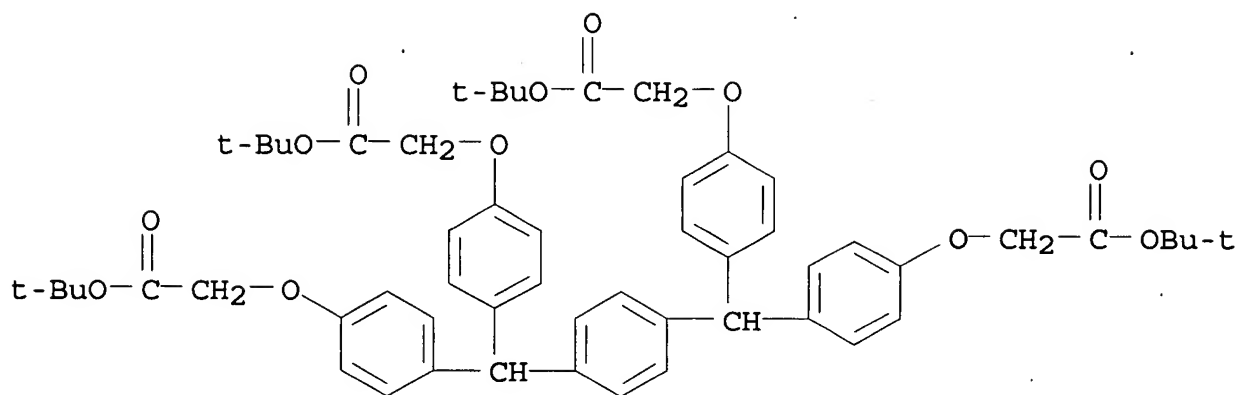


PAGE 1-B

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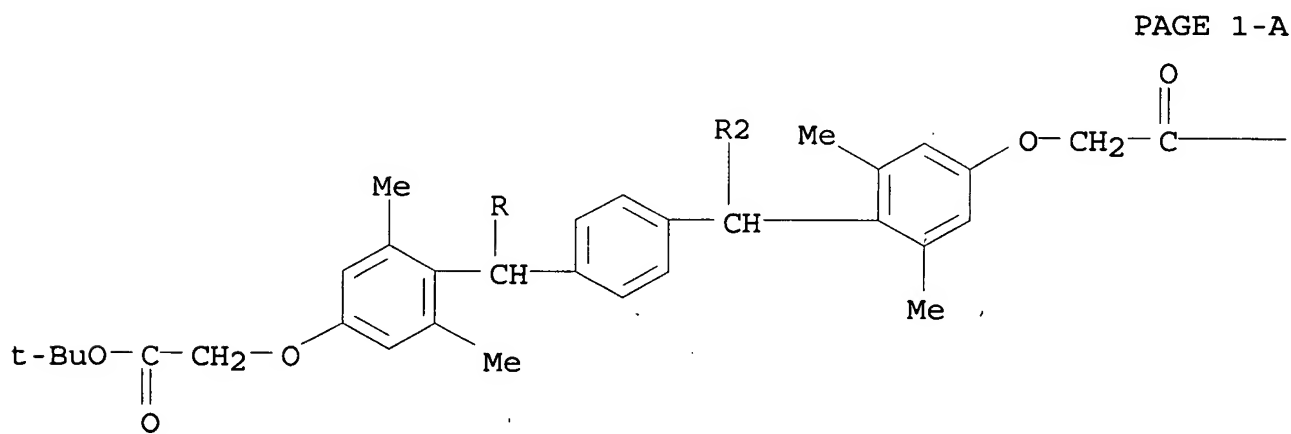
RN 182216-32-6 HCA  
 CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methyldiylnebis(4,1-phenyleneoxy)]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI)  
 (CA INDEX NAME)





RN 182216-34-8 HCA

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(3,5-dimethyl-4,1-phenylene)oxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

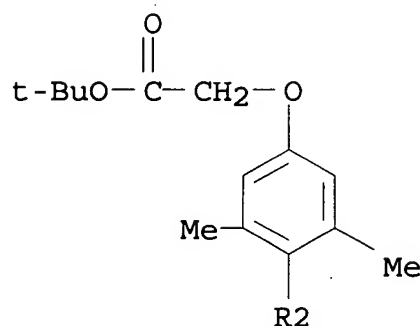
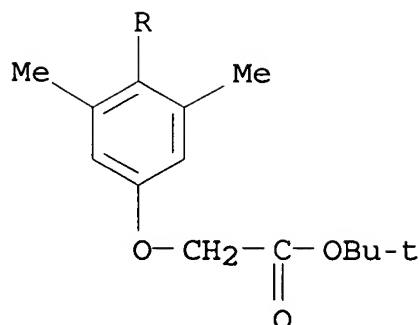


PAGE 1-A

PAGE 1-B

— OBU-t

PAGE 2-A

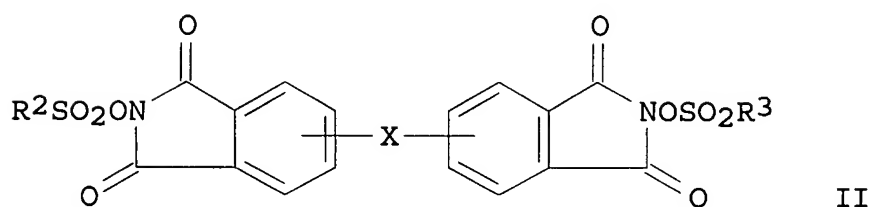
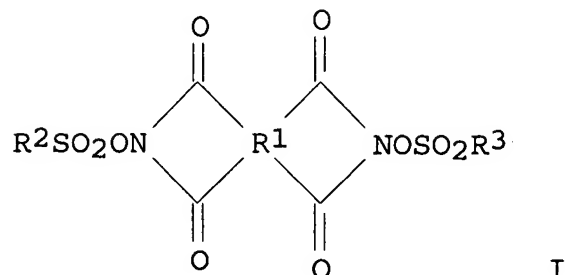


- IC ICM C07C069-712  
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 25
- ST **resist** three component dissoln inhibitor; pos  
**resist** benzene deriv dissoln inhibitor
- IT **Resists**  
(1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. **resist**)
- IT 107-59-5, tert-Butyl chloroacetate 18066-45-0 51866-62-7  
182216-24-6  
(in prepn. of 1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. **resist**)
- IT 177983-92-5P 182216-32-6P 182216-34-8P  
(prepn. of 1,4-bis(bisphenylmethyl)benzene deriv. for dissoln. inhibitor of pos. **resist**)

L70 ANSWER 37 OF 65 HCA COPYRIGHT 2007 ACS on STN  
125:261258 Radiation-sensitive resin compositions useful as positive- and negative-working **resists**. Suzuki, Masamutsu; Natsume, Norihiro; Kobayashi, Yasutaka; Isamoto, Yoshitsugu (Japan Synthetic

Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08184965 A  
 19960716 Heisei, 17 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1994-337093 19941227.

GI

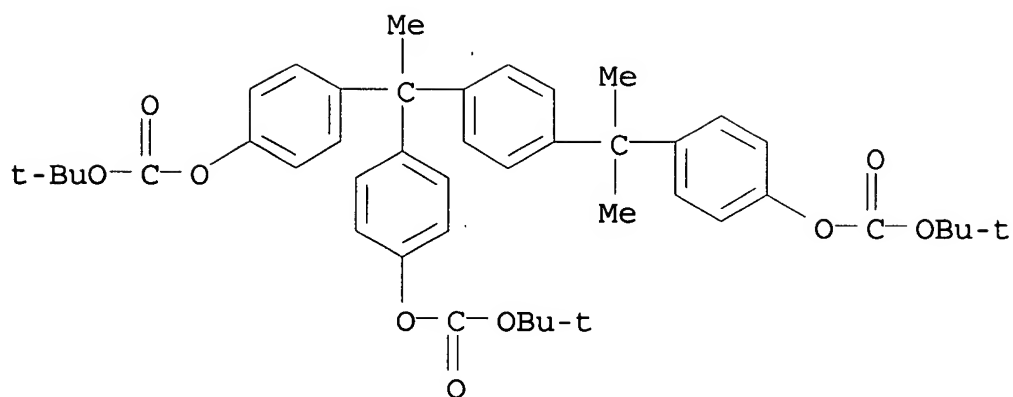


AB The title resin compns. contain (a)  $\geq 1$  bisimide compd. selected from I and II [R1 = tetraivalent hydrocarbon residue; R2, R3 = aliph., alicyclic, or arom. monovalent org. group; X = CO, CO<sub>2</sub>YOCO; Y = (N-sulfonyloxydicarboxyimido-contg.) alkylene] and (b) (1) an acid-dissocg. group-protected resin insol. or slightly sol. in alkali which becomes alkali-sol. when the group is dissocd. or (2) an alkali-sol. resin and a compd. which has a property of controlling the alkali-soly. of the resin and is decompd. in presence of acids to decrease or lose the function of controlling the alkali-soly. or to show a function of promoting the soly. The compns. may contain  $\geq 1$  of the bisimide compds., the alkali-sol. resin and a compd. able to crosslink the resin in presence of acids. The compns. show high soly. and photosensitivity and provide high resoln. patterns with good profile independent of post-baking conditions.

IT 151533-21-0P  
 (soly.-regulator; radiation-sensitive **resist** compns.  
 contg. sulfonyloxy-carboxyimide acid-generator)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

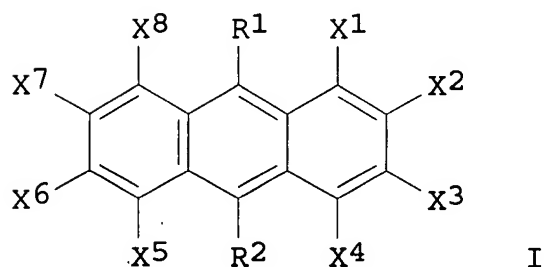


- IC ICM G03F007-038  
ICS G03F007-004; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 37
- ST **photoresist** sulfonyloxy carboxy imide acid generator;  
alkali soly **photoresist**
- IT **Resists**  
(radiation-sensitive, radiation-sensitive **resist** compns. contg. sulfonyloxy-carboxyimide acid-generator)
- IT 182003-14-1P 182003-18-5P 182003-21-0P 182003-23-2P  
182003-26-5P  
(acid-generator; radiation-sensitive **resist** compns. contg. sulfonyloxy-carboxyimide acid-generator)
- IT 121-44-8, reactions 24424-99-5, Di-tert-butyl dicarbonate  
110726-28-8  
(in prepn. of soly.-regulator for radiation-sensitive **resist** compns.)
- IT 89-32-7 98-59-9, p-Toluenesulfonyl chloride 358-23-6,  
Trifluoromethanesulfonic acid anhydride 594-44-5, Ethanesulfonyl  
chloride 1732-96-3 2386-60-9, Butanesulfonyl chloride  
4552-50-5 5470-11-1, Hydroxylammonium chloride 6053-46-9  
13912-65-7 182003-34-5  
(in prepn. of sulfonyloxy-carboxyimide acid-generator for **photoresist**)
- IT 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer  
168274-87-1P 182209-88-7P 182209-89-8P  
(radiation-sensitive **resist** compns. contg. sulfonyloxy-carboxyimide acid-generator)
- IT **151533-21-0P**  
(soly.-regulator; radiation-sensitive **resist** compns. contg. sulfonyloxy-carboxyimide acid-generator)

L70 ANSWER 38 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:261247 Chemically amplified, radiation-sensitive resin composition. Yamachika, Mikio; Kusama, Masatoshi; Kobayashi, Yasutaka; Tsuji, Akira (Japan Synthetic Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP 726500 A1 19960814, 30 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1996-300926 19960212. PRIORITY: JP 1995-46672 19950213.

GI



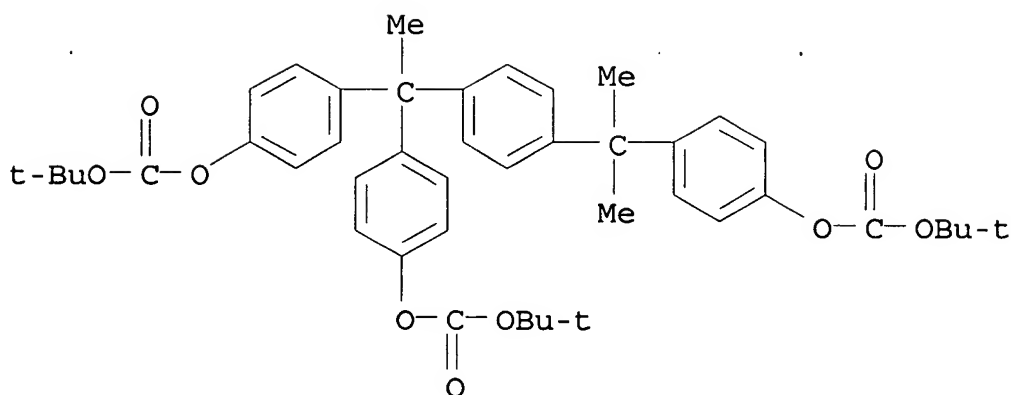
AB A chem. amplified, radiation-sensitive resin compn. comprises a radiation-sensitive acid generator which generates an acid upon irradiation with a radiation and in which the chem. change due to the catalytic action of the acid changes the soly. of the irradiated portion in a developer to form a pattern, characterized by comprising an anthracene deriv. of the formula I (X1-8 = H, halogen, alkyl, alkoxy, aryl, or nitro; R1, R2 = H, halogen, alkyl, alkoxy, aryl, nitro, (CH<sub>2</sub>)<sub>n</sub>OR<sub>3</sub>, (CH<sub>2</sub>)<sub>n</sub>CO<sub>2</sub>R<sub>3</sub> where R<sub>3</sub> = H, alkyl, or aryl; n = an integer of 0-3), such as anthracene-9-methanol and 9-ethoxycarbonylanthracene.

IT 151533-21-0P

(prepn. and use in radiation-sensitive resin compns.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-09  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 IT **Resists**  
 (radiation-sensitive, chem. amplified; contg. anthracene derivs.)  
 IT 24979-70-2P, Poly(p-hydroxystyrene) 87261-04-9P,  
 Poly(p-vinylphenol)-tert-butoxycarbonate 117458-06-7P  
 151533-21-0P 153928-42-8P, Methyl methacrylate;  
 tetrahydropyranyl acrylate copolymer 159296-87-4P, tert-Butyl  
 acrylate- p-vinylphenol copolymer 168274-87-1P, tert-Butyl  
 acrylate- p-isopropenylphenol copolymer  
 (prepn. and use in radiation-sensitive resin compns.)

L70 ANSWER 39 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:234432 Chemical amplification-type **resist** solution with improved coatability. Oota, Toshuki; Tanabe, Takayoshi; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 08179500 A 19960712 Heisei, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-335607 19941221.

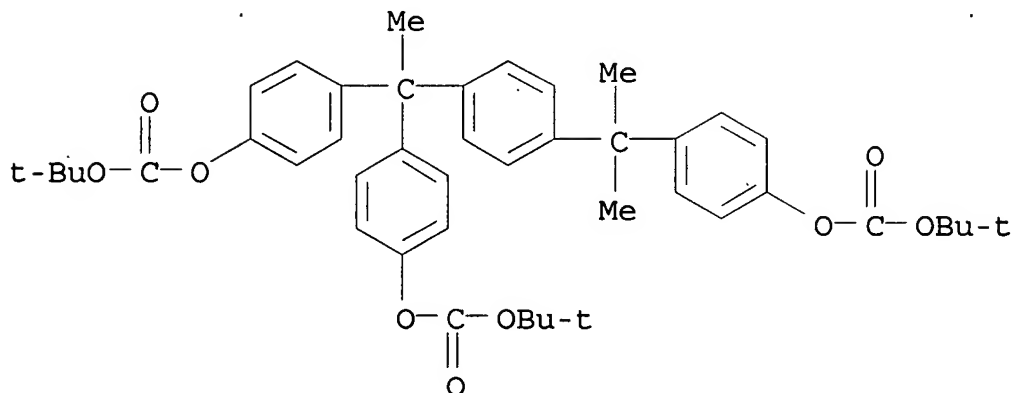
AB The title **resist** soln. contains propylene glycol alkyl ether propionate as a solvent. The soln. can be spin-coated on large-sized substrates to form an uniform **resist** film showing high photosensitivity and resolu. and is useful for manuf. of elec. circuits. Thus, poly(hydroxystyrene) protected partially with tert-butoxycarbonyl group and  $\text{Ph}_3\text{S}^+.\text{CF}_3\text{SO}_3^-$  were dissolved in propylene glycol monomethyl ether propionate to give a **resist** soln.

IT 151533-21-0P  
 (dissoln. inhibitor; chem. amplification-type **resist** compn. contg. propylene glycol alkyl ether propionate as solvent)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene

bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-004  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST chem amplification **resist** soln; propylene glycol alkyl ether propionate solvent  
 IT **Resists**  
 (chem. amplification-type **resist** compn. contg.  
 polypropylene glycol alkyl ether propionate as solvent)  
 IT 98516-33-7, Propylene glycol monomethyl ether propionate  
 181259-38-1  
 (chem. amplification-type **resist** compn. contg.  
 propylene glycol alkyl ether propionate as solvent)  
 IT 59269-51-1DP, Polyhydroxystyrene, ethers with Bu bromoacetate  
 84775-35-9P 95418-59-0P, p-tert-Butoxystyrene-styrene copolymer  
 170636-47-2P, tert-Butyl acrylate-styrene-vinylphenol copolymer  
 175284-06-7P, tert-Butyl acrylate-vinylphenol copolymer  
 (chem. amplification-type **resist** compn. contg.  
 propylene glycol alkyl ether propionate as solvent)  
 IT 3089-11-0  
 (crosslinking agent; chem. amplification-type **resist**  
 compn. contg. propylene glycol alkyl ether propionate as solvent)  
 IT 117458-06-7P **151533-21-0P**  
 (dissoln. inhibitor; chem. amplification-type **resist**  
 compn. contg. propylene glycol alkyl ether propionate as solvent)

L70 ANSWER 40 OF 65 HCA COPYRIGHT 2007 ACS on STN  
 125:45127 Positive chemically amplified **resist** composition and method for producing compounds used therein. Aoi, Toshiaki; Fujimori, Toru (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 709736 A1 **19960501**, 78 pp. DESIGNATED STATES: R: BE, DE. (English). CODEN: EPXXDW. APPLICATION: EP 1995-116815

19951025. PRIORITY: JP 1994-262790 19941026.

AB A pos. chem. amplified **resist** compn. is disclosed, comprising (a) a compd. which generates an acid upon irradiation with active light or radiant ray, (b) a resin insol. in water but sol. in an aq. alkali soln., and (c) a low-mol-wt. acid-decomposable dissoln. inhibitor having a mol. wt. of 3000 or less and contg. an acid-decomposable alkyl ester group represented by the formula  $-(CR_1R_2)_nCO_2CR_3R_4R_5$  ( $R_1, R_2 = H, \text{alkyl, or aryl}$ ;  $R_3, R_4, R_5 = H, \text{alkyl, cycloalkyl, alkoxy, alkenyl, aralkyl, or aryl}$ , provided that two of  $R_3, R_4$ , and  $R_5$  may be combined to form a ring;  $n = \text{an integer of 1-10}$ ), which increases its soly. in an alkali developer by the action of an acid, and having a sodium content and a potassium content each of 30 ppb or less. Further disclosed are methods for producing the compds. (c).

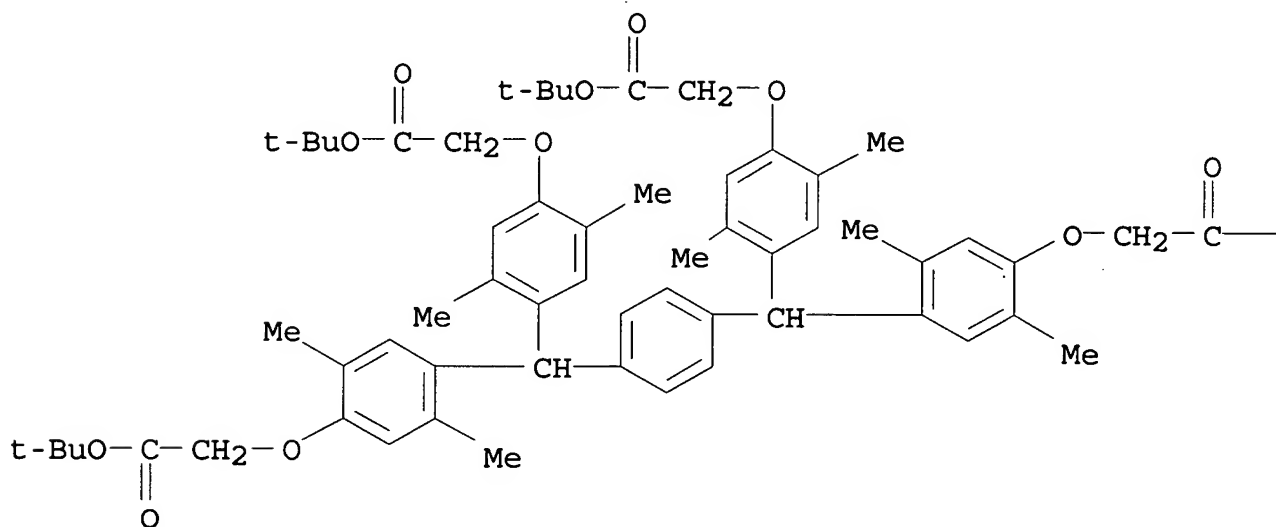
IT 177983-92-5P

(prepn. and use as acid-decomposable dissoln. inhibitor for pos **photoresist**)

RN 177983-92-5 HCA

CN Acetic acid, 2,2',2'',2'''-[1,4-phenylenebis[methylidynebis[(2,5-dimethyl-4,1-phenylene)oxy]]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A





PAGE 1-B

— OBU-t

IC ICM G03F007-004  
ICS C08F008-02

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos chem amplified **photoresist** compn; acid decomposable  
dissoln inhibitor pos **photoresist**

IT **Resists**  
(photo-, pos.-working, contg. alkali-sol. resins, photosensitive acid generators, and acid-decomposable dissoln. inhibitors)

IT 66003-78-9 124737-97-9 142096-70-6 153698-46-5 153698-67-0  
176109-33-4 177786-96-8 177786-97-9 177786-98-0  
(photosensitive acid generator for pos. **photoresists**)

IT 142952-62-3P 153698-58-9P 153698-63-6P 153698-65-8P  
159293-87-5P 177787-08-5P **177983-92-5P** 177983-93-6P  
177983-94-7P 177983-95-8P 177983-96-9P 177983-97-0P  
177983-99-2P 177984-01-9P 177984-02-0P 177984-03-1P  
177984-04-2P 177984-05-3P 177984-06-4P 178066-92-7P  
(prepn. and use as acid-decomposable dissoln. inhibitor for pos **photoresist**)

IT 75-59-2, Tetramethylammonium hydroxide 100-85-6,  
Benzyltrimethylammonium hydroxide 123-41-1, Choline hydroxide  
4466-18-6 5292-43-3, tert-Butyl bromoacetate 24979-70-2,  
Poly(4-hydroxystyrene) 24979-74-6, 4-Hydroxystyrene-styrene  
copolymer 29322-78-9, Poly(3-methyl-4-hydroxystyrene) 51866-62-7  
76937-83-2,  $\alpha, \alpha, \alpha', \alpha', \alpha'', \alpha''$ -  
Hexakis(4-hydroxyphenyl)-1,3,5-triethylbenzene 110726-28-8  
138646-88-5 148452-55-5, 1,3,3,5-Tetrakis(4-hydroxyphenyl)pentane  
(reaction in prepg. acid-decomposable dissoln. inhibitor for pos **photoresist**)

L70 ANSWER 41 OF 65 HCA COPYRIGHT 2007 ACS on STN

125:45124 Positive-working photosensitive composition. Aoi, Toshiaki;  
Yamanaka, Tsukasa; Uenishi, Kazuya (Fuji Photo Film Co., Ltd.,  
Japan). Eur. Pat. Appl. EP 708368 A1 **19960424**, 78 pp.  
DESIGNATED STATES: R: BE, DE. (English). CODEN: EPXXDW.  
APPLICATION: EP 1995-114054 19950907. PRIORITY: JP 1994-252351

19941018.

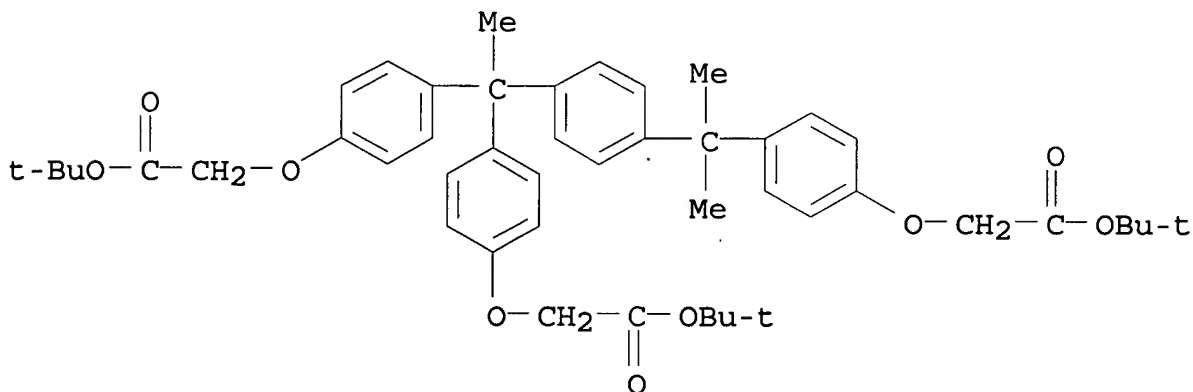
AB A pos.-working photosensitive compn. for the prodn. of lithog. plates comprises (a) a resin which is insol. in water but sol. in an alk. aq. soln., (b) a compd. which generates an acid upon irradiation with active light, (c) a low-mol.-wt. acid-decomposable dissoln.-inhibitive compd. having a mol. wt. of 3000 or less, containing a group decomposable with an acid, and being capable of increasing its soly. in an alk. developer by the action of an acid, and (d) a resin containing a basic nitrogen atom and having a wt.-av. mol. wt. of 2000 or more. The pos.-working photosensitive compn. of the present invention can easily and properly inhibit acid diffusion and acid deactivation on the surface thereof with time between the exposure and the heat treatment, keep the dissoln. inhibiting effect exerted by a dissoln.-inhibitive compd., and exhibit a good profile, a high sensitivity, and a high resolving power.

IT 153698-54-5 153698-55-6 160457-12-5  
177787-04-1

(lithog. plate manuf. and **resist** pattern formation using pos.-working photosensitive compns. containing.)

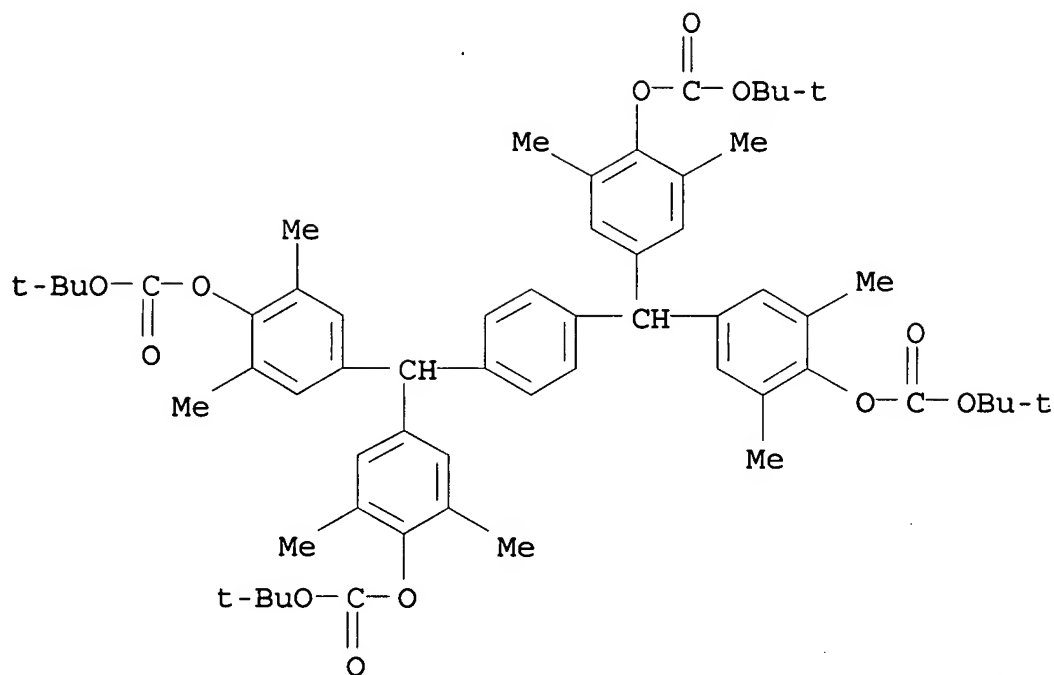
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



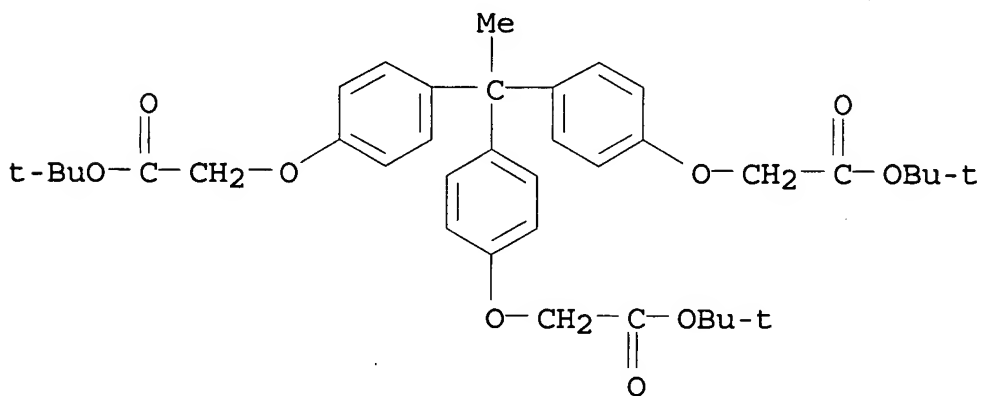
RN 153698-55-6 HCA

CN Carbonic acid, (1,4-phenylenedimethylidyne)tetrakis(2,6-dimethyl-4,1-phenylene) tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



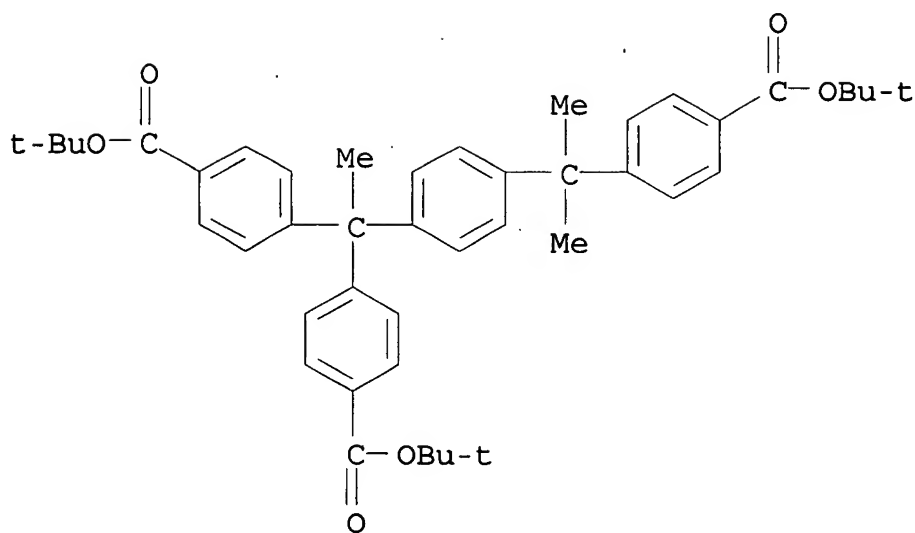
RN 160457-12-5 HCA

CN Acetic acid, 2,2',2''-[ethyldynetris(4,1-phenyleneoxy)]tris-,  
tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 177787-04-1 HCA

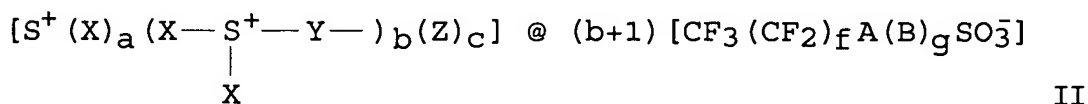
CN Benzoic acid, 4,4'-[1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]phenyl]-1-methylethyl]phenyl]ethyldiene]bis-, bis(1,1-dimethylethyl) ester  
(9CI) (CA INDEX NAME)



- IC ICM G03F007-004  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST pos photosensitive compn lithog plate; semiconductive device pos **photoresist**  
 IT **Resists**  
 (photo-, pos.-working, contg. alkali-sol. resins, photosensitive acid generators, acid-decomposable dissoln. inhibitors, and nitrogen-contg. resins)  
 IT 24979-74-6, Styrene-p-hydroxystyrene copolymer 32335-20-9  
 66003-76-7, Diphenyliodonium triflate 66003-78-9,  
 Triphenylsulfonium triflate 124737-97-9 124738-06-3  
 129674-22-2, 4-(tert-Butoxycarbonyloxy)styrene-p-hydroxystyrene copolymer 133685-94-6, o-Hydroxystyrene-p-hydroxystyrene copolymer  
 138089-25-5, 2,2-Bis(tert-butoxycarbonyloxyphenyl)propane  
 142096-70-6 149642-75-1, p-Hydroxystyrene-4-vinylpyridine copolymer 152238-74-9 153698-46-5, Triphenylsulfonium pentafluorobenzenesulfonate **153698-54-5**  
**153698-55-6** 153698-59-0 153698-62-5 153698-63-6  
 153698-67-0 **160457-12-5** 171429-59-7,  
 p-Acetoxystyrene-p-hydroxystyrene copolymer 176109-33-4  
 177786-96-8 177786-97-9 177786-98-0 177786-99-1,  
 4-Hydroxystyrene-4-dimethylaminostyrene copolymer 177787-00-7  
 177787-02-9 177787-03-0 **177787-04-1** 177787-05-2  
 177787-06-3 177787-07-4 177787-08-5 177787-09-6 177799-93-8  
 177799-95-0 178067-74-8  
 (lithog. plate manuf. and **resist** pattern formation using pos.-working photosensitive compns. contg.)

L70 ANSWER 42 OF 65 HCA COPYRIGHT 2007 ACS on STN  
 124:302584 Novel onium salt and radiation-sensitive resin composition  
 containing same. Suzuki, Masamutsu; Kobayashi, Yasutaka; Tsuji,  
 Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo  
 Koho JP 08027094 A 19960130 Heisei, 20 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1994-177743 19940707.

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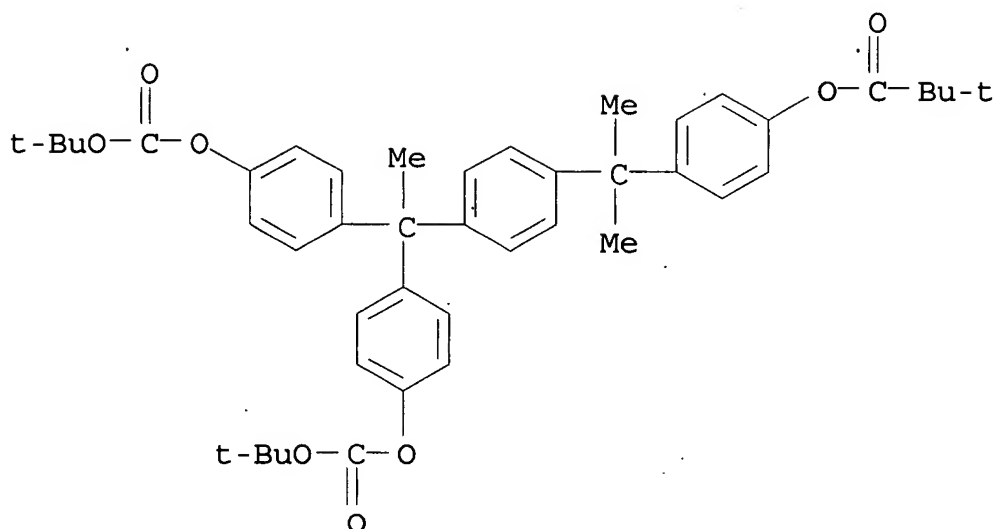
AB The title onium salt has formula I or II (X = arom. group, alkyl, cycloalkyl, aralkyl, phenacyl; Y = divalent org. group; Z = divalent group for forming ring with I or S; A = CH<sub>2</sub>, CHF, CF<sub>2</sub>; B = O, Ar, ArO, OAr (Ar = phenylene, naphthylene, anthrylene); g = 0, 1; e, f = 5-40; in I: a, b = 0-2; c = 0, 1; a + b + 2c = 2; in II: a, b = 0-3; c = 0, 1; a + b + 2c = 3). The title resin compn. (pos.-working) contains the above onium salt, an alk.-sol. resin and a soly.-controlling agent. The resin compn. (neg.-working) may contain the above onium salt, an alk.-sol. resin and a crosslinker.

IT 175905-39-2P

(prepd. as soly. controlling agent for radiation-sensitive resin compn.)

RN 175905-39-2 HCA

CN Propanoic acid, 2,2-dimethyl-, 4-[1-[4-[1,1-bis[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]ethyl]phenyl]-1-methylethyl]phenyl ester (9CI) (CA INDEX NAME)



- IC ICM C07C305-04  
 ICS C07C305-22; C07C309-03; C07C309-28; C07C381-12; C08K005-37;  
 C08K005-42; C08L101-00; G03F007-004
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)
- IT **Resists**  
 (photo-, novel onium salt for)
- IT **175905-39-2P**  
 (prepd. as soly. controlling agent for radiation-sensitive resin  
 compn.)

L70 ANSWER 43 OF 65 HCA COPYRIGHT 2007 ACS on STN

124:160416 Positive photosensitive composition. Aoi, Toshiaki;  
 Yamanaka, Tsukasa (Fuji Photo Film Co., Ltd., Japan). Eur. Pat.  
 Appl. EP 691575 A2 19960110, 81 pp. DESIGNATED STATES: R:  
 BE, DE. (English). CODEN: EPXXDW. APPLICATION: EP 1995-110358  
 19950703. PRIORITY: JP 1994-152218 19940704; JP 1994-157278  
 19940708; JP 1994-160143 19940712.

AB A pos. photosensitive compn. comprises (a) a resin sol. in an aq.  
 alkali soln. contg. a specific structure unit, (b) a compd. which  
 generates an acid with irradiation of an active ray or radiation, and  
 (c) a low-mol.-wt. acid-decomposable dissoln. inhibitor having a  
 mol. wt. of not more than 3000, which possesses a tertiary alkyl  
 ester group and whose soly. in an aq. alkali soln. is increased by  
 the action of an acid, wherein compd. (c) is a compd. having at  
 least two tertiary alkyl ester groups, in which the longest distance  
 with respect to the distance between two tertiary ester groups  
 selected arbitrarily comprises at least 10 bonding atoms except for  
 the atoms contained in the ester groups or a compd. having at least

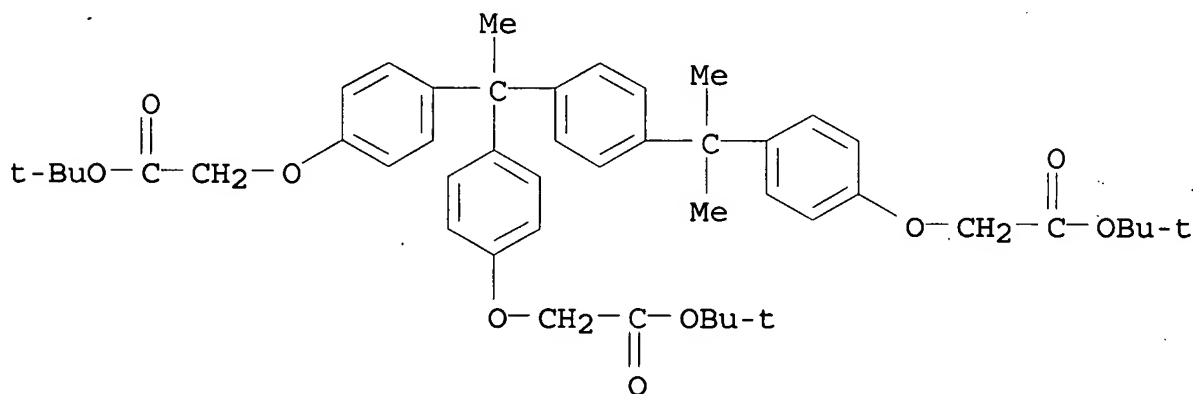
three tertiary alkyl ester groups, in which the longest distance with respect to the distance between two tertiary ester groups. The pos. photosensitive compn. has a high sensitivity, high resolu. and good profile and excels in storage stability and heat resistance of the resist soln.

IT 153698-54-5P 159293-89-7P 173786-60-2P

(prepn. and use in pos. photosensitive compns. for lithog. plate manuf.)

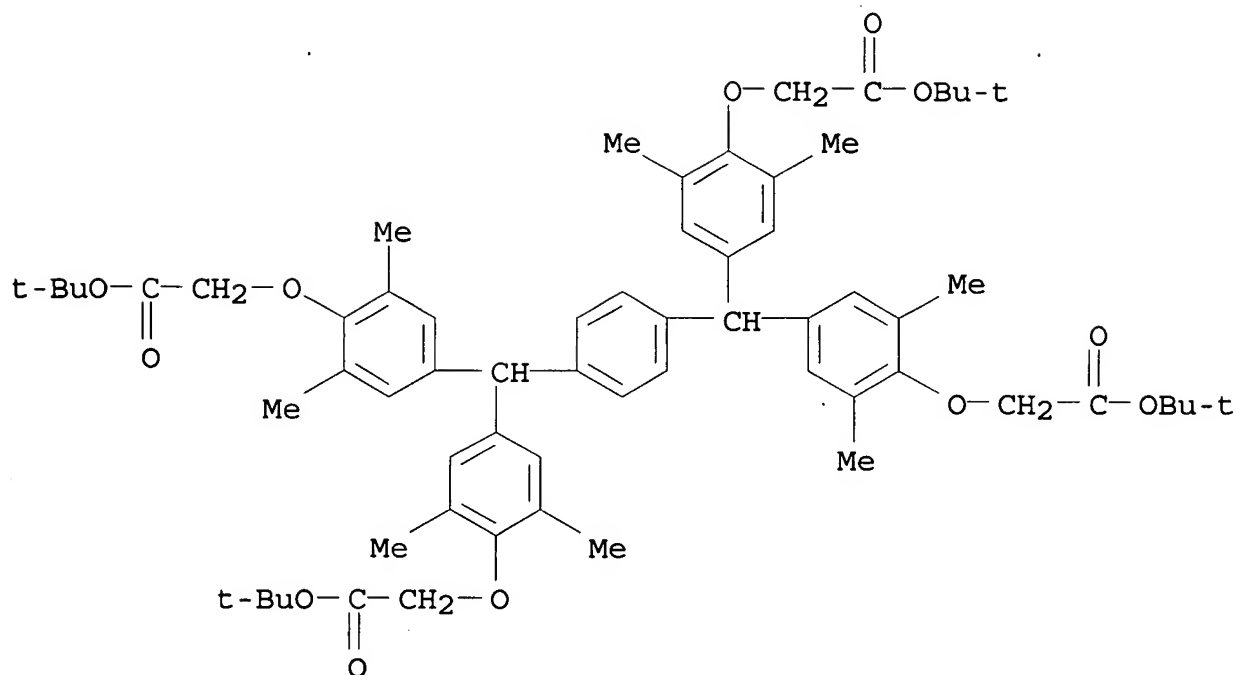
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



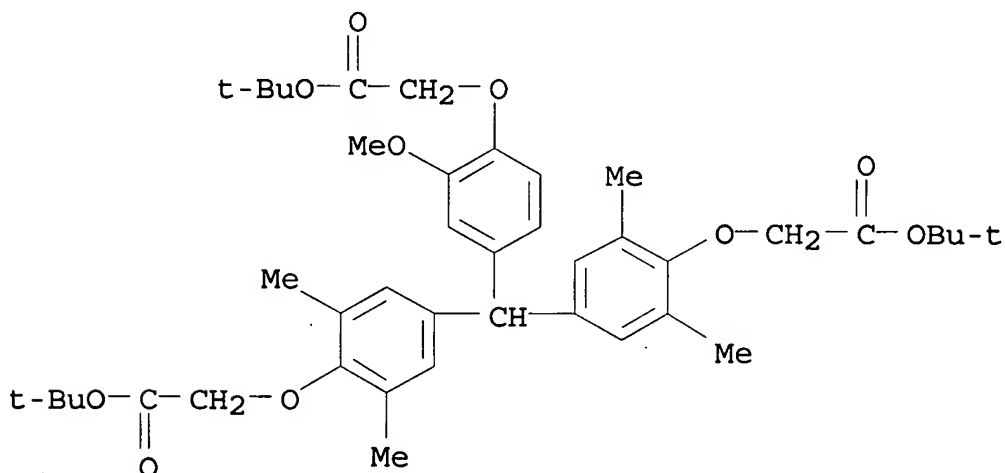
RN 159293-89-7 HCA

CN Acetic acid, 2,2',2'',2'''-[(1,4-phenylenedimethylidyne)tetrakis[(2,6-dimethyl-4,1-phenylene)oxy]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 173786-60-2 HCA

CN Acetic acid, 2,2'-[[[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-3-methoxyphenyl]methylene]bis[(2,6-dimethyl-4,1-phenylene)oxy]]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Resists**



(photo-, pos.-working, contg. alkali-sol. resins and acid generators and acid-decomposable dissoln. inhibitors)

IT 108-24-7DP, Acetic anhydride, reaction products with poly(hydroxystyrene) 24979-70-2DP, Poly(p-hydroxystyrene), reaction products with acetic anhydride 53746-03-5P, p-Acetoxystyrene-styrene copolymer 134443-05-3P 149614-51-7P  
 153698-54-5P 153698-58-9P 153698-59-0P 153698-63-6P  
 153698-65-8P 159293-89-7P 159872-31-8P 162744-66-3P  
 173786-59-9P 173786-60-2P 173786-61-3P 173786-62-4P  
 173786-63-5P 173786-64-6P 173786-65-7P 173786-66-8P  
 173786-67-9P 173786-68-0P 173786-69-1P 173786-70-4P  
 173786-71-5P 173786-73-7P 173786-74-8P 173786-75-9P  
 173786-76-0P 173786-77-1P 173786-79-3P 173786-80-6P  
 173786-81-7P 173786-82-8P

(prepn. and use in pos. photosensitive compns. for lithog. plate manuf.)

L70 ANSWER 44 OF 65 HCA COPYRIGHT 2007 ACS on STN

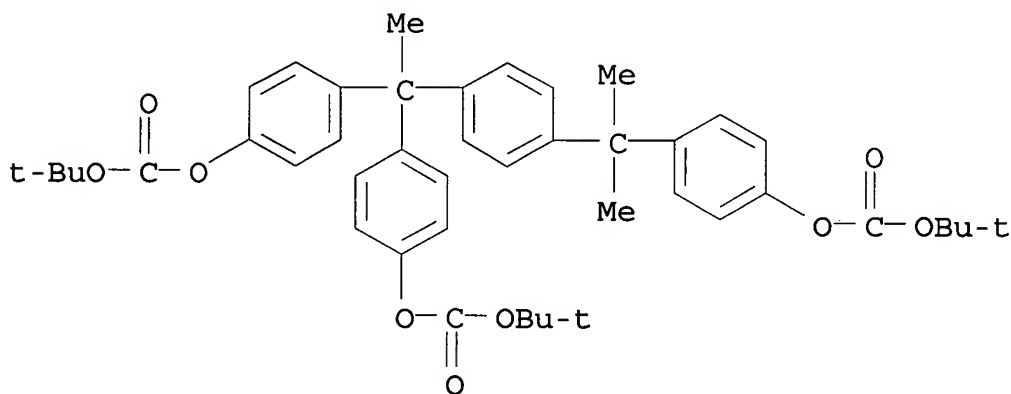
124:101869 Chemically amplified **resist** solution. Kobayashi, Hidekazu; Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07261377 A 19951013 Heisei, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-48634 19940318.

AB The soln. contains Me  $\beta$ -methoxyisobutyrate as a solvent. The soln. gives **resist** films with high sensitivity and resoln.

IT 151533-21-0P  
 (dissoln. inhibitor; chem. amplified **resist** soln. contg. Me  $\beta$ -methoxyisobutyrate solvent for high sensitivity and resoln.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004  
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **resist** methyl methoxyisobutyrate solvent

IT **Resists**  
(chem. amplified **resist** soln. contg. Me  
 $\beta$ -methoxyisobutyrate solvent for high sensitivity and  
resoln.)

IT 1886-74-4 66003-78-9 69432-40-2 114719-51-6 126615-05-2  
133710-62-0  
(acid generator; chem. amplified **resist** soln. contg. Me  
 $\beta$ -methoxyisobutyrate solvent for high sensitivity and  
resoln.)

IT 97-64-3, Ethyl lactate 123-86-4, Butyl acetate 763-69-9, Ethyl  
3-ethoxypropionate 3852-09-3, Methyl 3-methoxypropionate  
7778-85-0, Propylene glycol dimethyl ether  
(chem. amplified **resist** soln. contg. Me  
 $\beta$ -methoxyisobutyrate solvent for high sensitivity and  
resoln.)

IT 5292-43-3DP, tert-Butyl bromoacetate, reaction products with  
polyhydroxystyrene 24424-99-5DP, Di-tert-butyl dicarbonate,  
reaction products with polyhydroxystyrene 27812-47-1P, tert-Butyl  
acrylate-vinylphenol copolymer 59269-51-1DP, Polyhydroxystyrene,  
tert-butoxycarbonyl-modified 95418-59-0DP, p-tert-Butoxystyrene-  
styrene copolymer, hydrolyzed 170636-47-2P, tert-Butyl  
acrylate-styrene-vinylphenol copolymer  
(chem. amplified **resist** soln. contg. Me  
 $\beta$ -methoxyisobutyrate solvent for high sensitivity and  
resoln.)

IT 80-05-7, Bisphenol A, reactions 24424-99-5, Di-tert-butyl  
dicarbonate  
(chem. amplified **resist** soln. contg. Me  
 $\beta$ -methoxyisobutyrate solvent for high sensitivity and  
resoln.)

IT 3852-11-7, Methyl  $\beta$ -methoxyisobutyrate 24979-70-2D,  
hydrogenated  
(chem. amplified **resist** soln. contg. Me  
 $\beta$ -methoxyisobutyrate solvent for high sensitivity and  
resoln.)

IT 3089-11-0  
(crosslinking agent; chem. amplified **resist** soln.  
contg. Me  $\beta$ -methoxyisobutyrate solvent for high sensitivity  
and resoln.)

IT 117458-06-7P 151533-21-0P  
(dissoln. inhibitor; chem. amplified **resist** soln.  
contg. Me  $\beta$ -methoxyisobutyrate solvent for high sensitivity  
and resoln.)

L70 ANSWER 45 OF 65 HCA COPYRIGHT 2007 ACS on STN

124:101865 Positive-working **photoresist** composition.

Yamanaka, Tsukasa; Sakaguchi, Shinji; Kokubo, Tadayoshi; Kawabe, Yasumasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07271037 A 19951020 Heisei, 53 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-63862 19940331.

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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

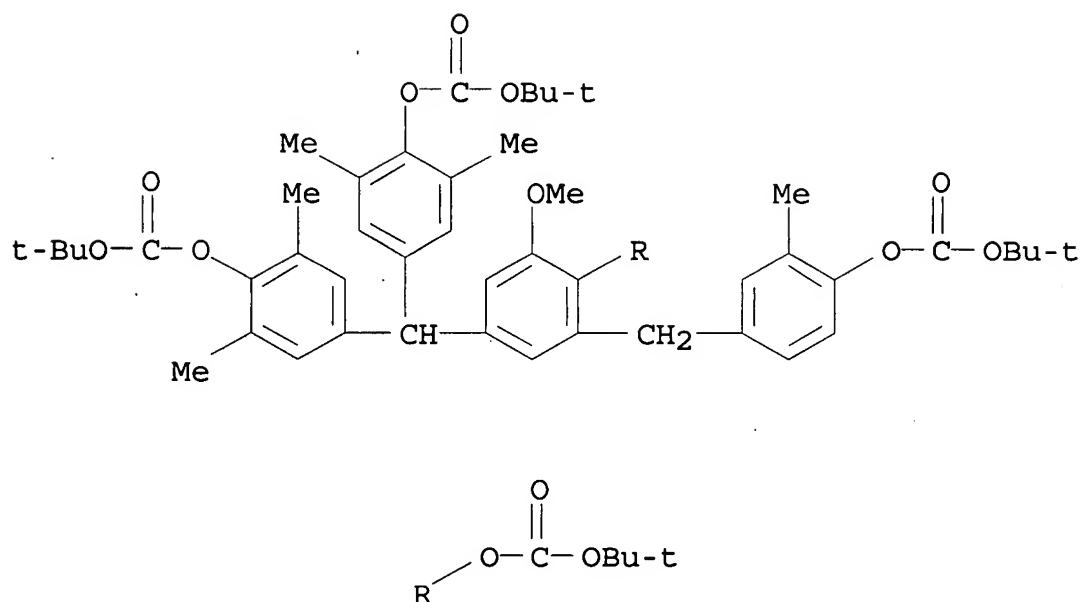
AB The title compn. comprises an alkali sol. resin, a photoacid generator, and  $\geq 1$  kinds of compds. selected from I and II (R1-41 = H, XRa1, CN, OD0; X1-10 = single bond, carbonyl, sulfido, sulfonyl, CRb1Rb2; X = single bond, O, S, CO, OCO, NRA1CO, NRA2; Ra1 = C1-10 alkyl, alkylene, cycloalkyl, haloalkyl, aryl, alkylaryl, aralkyl; Ra2 = H, Ra1; Rb1, Rb2 = H, Me, Et, C1-4 haloalkyl; D0-12 = H, Dinh; Dinh = XiRi; Xi = CRb1Rb2, CRb1Rb2O, CO, CS, COO, COS, CRb1Rb2CO, CRb1Rb2COO, CRb1ORi, CONRb1; Ri = H, C1-20 alkyl, alkenyl, C3-20 cycloalkyl, C6-20 aryl, cumyl, adamantyl, SiZiRb3ZiRb4ZiRb5, tetrahydro-pyranyl, pyranyl, 1,3-dithia-indane-2-yl; Rb3-b5 = C1-20 alkyl, cycloalkyl, alkenyl, C6-20 aryl; Zi = single bond, O; i, j, k, m, n = 0, 1).

IT 172651-23-9P

(pos.-working **photoresist** compn. comprising)

RN 172651-23-9 HCA

CN Carbonic acid, [[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]-3-[[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]-3-methylphenyl]methyl]-5-methoxyphenyl]methylene]bis(2,6-dimethyl-4,1-phenylene)bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos working **photoresist** compn
- IT **Resists**  
(photo-, pos.-working, pos.-working **photoresist** compn.)
- IT 172651-16-0P 172651-17-1P 172651-18-2P 172651-19-3P  
172651-20-6P 172651-21-7P 172651-22-8P **172651-23-9P**  
172651-24-0P 172651-25-1P 172651-26-2P 172651-27-3P  
172651-28-4P 172651-29-5P 172651-30-8P 172651-31-9P  
172651-32-0P  
(pos.-working **photoresist** compn. comprising)
- IT 172651-14-8P 172651-15-9P 172651-33-1P 172651-34-2P  
(pos.-working **photoresist** compn. from)
- IT 91-04-3, 2,6-Bis(hydroxymethyl)-p-cresol 95-48-7, o-Cresol,  
reactions 95-87-4 172651-13-7  
(pos.-working **photoresist** compn. from)

L70 ANSWER 46 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:354665 Positive-working radiation-sensitive resin composition and patterning using same. Fukunaga, Masanori; Kitaori, Tomoyuki; Koyanagi, Takao; Nagasawa, Kotaro (Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 07219216 A **19950818** Heisei, 6 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-25870 19940131.

AB The chem. amplification-type radiation-sensitive compn. comprises a naphthoquinonediazide compd. and a compd. generating an acid upon

irradn. The compn. is coated on a substrate, heat-treated, uniformly irradiated with (near) UV, imagewise exposed, heat-treated, and developed to give patterns. The compn. shows high sensitivity, and gives stable, high resolu. images with dry etching resistance.

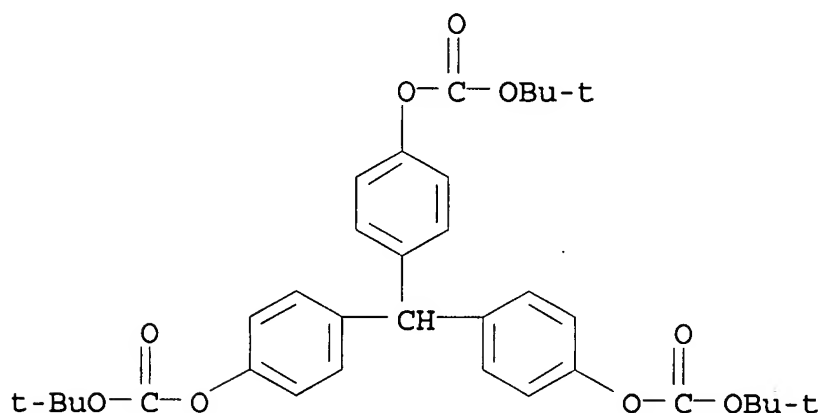
IT **153041-55-5P**

(acid-decomposable compd.; pos.-working **resist** compn.

contg. naphthoquinonediazide compd. and acid-generating agent)

RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-022; G03F007-039; G03F007-26; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST naphthoquinonediazide compd radiation sensitive **resist**

IT Phenolic resins, uses

(pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

IT **Resists**

(radiation-sensitive, pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

IT 143264-90-8P, 3,3-Bis(4-tert-butoxycarbonyloxy-3-methylphenyl)phthalide **153041-55-5P**

(acid-decomposable compd.; pos.-working **resist** compn.

contg. naphthoquinonediazide compd. and acid-generating agent)

IT 66003-78-9

(pos.-working **resist** compn. contg.

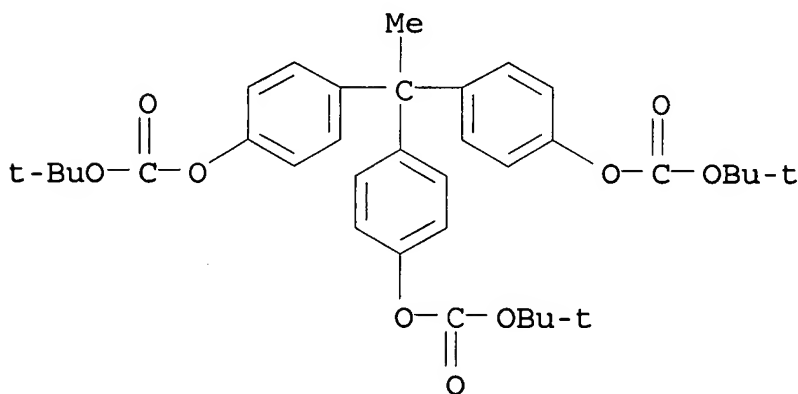
naphthoquinonediazide compd. and acid-generating agent)

IT 94896-59-0P 136958-90-2P, Bisphenol A 1,2-naphthoquinonediazide-4-sulfonate

(pos.-working **resist** compn. contg.

naphthoquinonediazide compd. and acid-generating agent)

- IT 25053-88-7, p-Cresol-formaldehyde copolymer  
(pos.-working **resist** compn. contg.  
naphthoquinonediazide compd. and acid-generating agent)
- L70 ANSWER 47 OF 65 HCA COPYRIGHT 2007 ACS on STN  
123:270797 Photosensitive composition and pattern formation using same.  
Oonishi, Kyonobu; Sato, Kazuo; Chiba, Kenji; Hayashi, Yoshio;  
Hayase, Rumiko; Niki, Hiroichi (Tokyo Shibaura Electric Co, Japan).  
Jpn. Kokai Tokkyo Koho JP 07199468 A 19950804 Heisei, 29  
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-354206  
19931228.
- AB The title compn. comprises an alk.-sol. compd. upon acid-decompn.  
and an acid generating compd. upon irradiation, wherein the alk.-sol.  
compd. is based on one component showing small mol. polarity and  
slow alk. dissolving speed and other component showing big mol.  
polarity and fast alk. dissolving speed. Pattern formation using  
the photosensitive compn. is also claimed. The photosensitive  
compn. as **resist** material shows high-sensitivity and  
high-resoln. to short wavelength lights to give **resist**  
pattern with fine profile.
- IT 143213-46-1  
(alk.-sol. compd. contained in photosensitive compn. for pattern  
formation)
- RN 143213-46-1 HCA
- CN Carbonic acid, ethylidynetris(4,1-phenylene tris(1,1-dimethylethyl)  
ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS G03F007-004; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)
- IT **Resists**  
(photo-, compn. for pattern formation)
- IT 117458-06-7 129674-22-2 142952-62-3 143213-46-1

146969-18-8 169123-13-1 169123-14-2  
(alk.-sol. compd. contained in photosensitive compn. for pattern formation)

L70 ANSWER 48 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:183515 Radiation-sensitive resin compositions. Kobayashi, Hidekazu; Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07092663 A 19950407 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-261874 19930924.

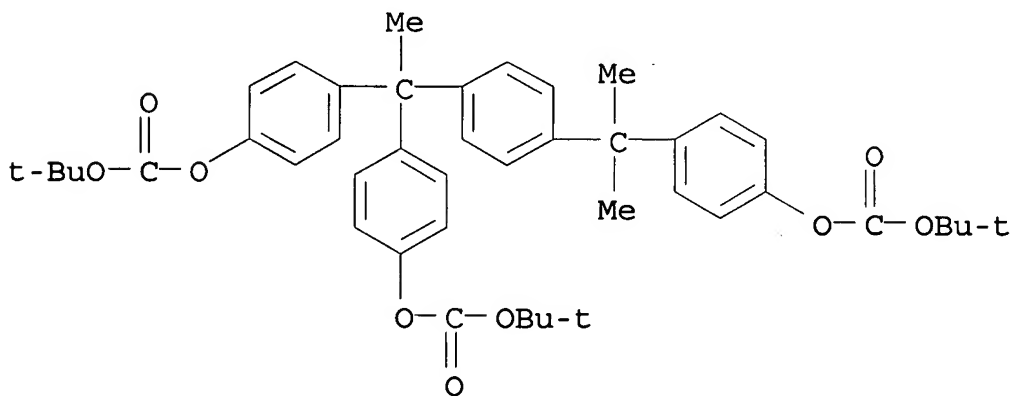
AB The title resin compns. comprise a **resist**, in which the soly. of the radiation-exposed area in the developing soln. is changed by the chem. change caused by catalytic action of the acid generated by irradiation to form a pattern, are dissolved in a mixed solvent of Bu acetate (I) and Et 3-ethoxypropionate (II). The compns. show a high sensitivity, high resolu., and good coatability in spin-coating on large-scaled substrates. Thus, a poly(hydroxystyrene) partially substituted with tert-butoxycarbonyl group and triphenylsulfonium triflate were dissolved in a I-II mixt. (50:50 wt. ratio) to give a **resist** soln.

IT 151533-21-0P

(dissoln. inhibitor; radiation sensitive **resist** compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

ICS G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

ST radiation sensitive **resist** compn solvent

IT **Resists**

- (radiation-sensitive, radiation-sensitive **resist** compn.  
using solvent contg. mixt. of Bu acetate and Et ethoxypropionate)
- IT 66003-78-9, Triphenylsulfonium triflate  
(acid generator; radiation-sensitive **resist** compn.)
- IT 167634-73-3  
(crosslinking agent; radiation-sensitive **resist** compn.)
- IT 117458-06-7P 151533-21-0P  
(dissoln. inhibitor; radiation sensitive **resist** compn.)
- IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with  
polyhydroxystyrene 59269-51-1DP, Poly(hydroxystyrene),  
butoxycarbonylated 95418-59-0DP, hydrolyzed  
(radiation sensitive **resist** compn.)
- IT 123-86-4, Butyl acetate 763-69-9, Ethyl 3-ethoxypropionate  
(radiation-sensitive **resist** compn. using solvent contg.  
mixt. of Bu acetate and Et ethoxypropionate)

L70 ANSWER 49 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:183514 Radiation-sensitive resin compositions. Kobayashi, Hidekazu;  
Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan).  
Jpn. Kokai Tokkyo Koho JP 07092662 A 19950407 Heisei, 12  
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-261873  
19930924.

AB The title resin compns. comprise a **resist**, of which the  
soly. of the radiation-exposed area in the developing soln. is  
changed by the chem. change caused by catalytic action of the acid  
generated by irradiation to form a pattern, dissolved in a mixed solvent  
composed of an ester of unsubstituted C1-4 satd. aliph. carboxylic  
acids and C1-6 alcs. and a propylene glycol alkyl ether and/or  
propylene glycol alkyl ether acetate. The compns. show high  
sensitivity, high resoln., and good coatibility in spin-coating on  
large-scaled substrates. Thus, a poly(hydroxystyrene) partially  
substituted with tert-butoxy carbonyl group and triphenylsulfonium  
triflate were dissolved in a Bu acetate-propylene glycol di-Me ether  
mixt. (50:50) to give a **resist** soln.

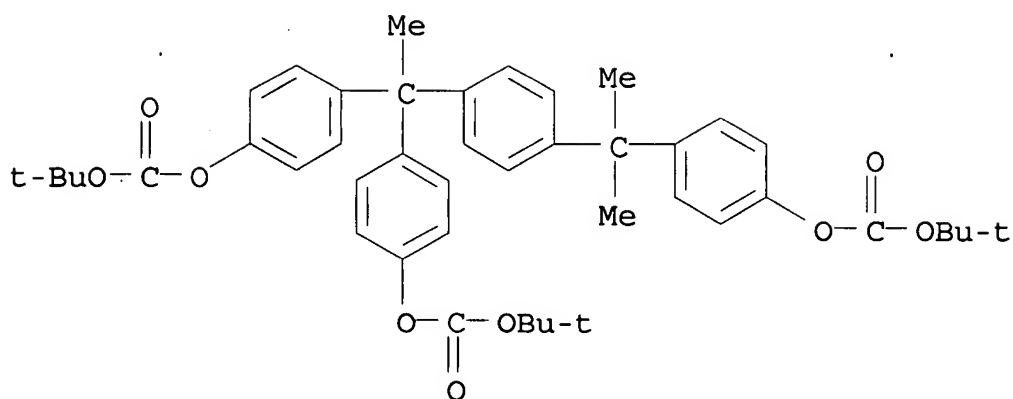
IT 151533-21-0P

(dissoln. inhibitor; radiation sensitive **resist** compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl  
]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)





- IC ICM G03F007-004  
ICS G03F007-038; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST radiation sensitive **resist** compn solvent
- IT **Resists**  
(radiation-sensitive, solvent mixt. for radiation-sensitive **resist** contg. acid generator)
- IT 66003-78-9, Triphenylsulfonium triflate 130285-49-3  
(acid generator; radiation-sensitive **resist** compn.)
- IT 3089-11-0  
(crosslinking agent; radiation-sensitive **resist** compn.)
- IT 117458-06-7P **151533-21-0P**  
(dissoln. inhibitor; radiation sensitive **resist** compn.)
- IT 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with polyhydroxystyrene 59269-51-1DP, Poly(hydroxystyrene), butoxycarbonylated 95418-59-0DP, p-tert-Butoxystyrene-styrene copolymer, hydrolyzed  
(radiation sensitive **resist** compn.)
- IT 123-86-4, Butyl acetate 123-92-2, Isoamyl acetate 638-11-9, Isopropyl butyrate 638-49-3, Amyl formate 7778-85-0, Propylene glycol dimethyl ether 84540-57-8, Propylene glycol monomethyl ether acetate  
(solvent mixt. for radiation-sensitive **resist** contg. acid generator)

L70 ANSWER 50 OF 65 HCA COPYRIGHT 2007 ACS on STN  
123:156422 Chemically amplified **resist** composition..  
Kobayashi, Eiichi; Murata, Makoto; Ota, Toshiyuki; Tsuji, Akira  
(Japan Synthetic Rubber Co., Ltd., Japan). Eur. Pat. Appl. EP  
634696 A1 **19950118**, 23 pp. DESIGNATED STATES: R: DE, FR,  
GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1994-305148

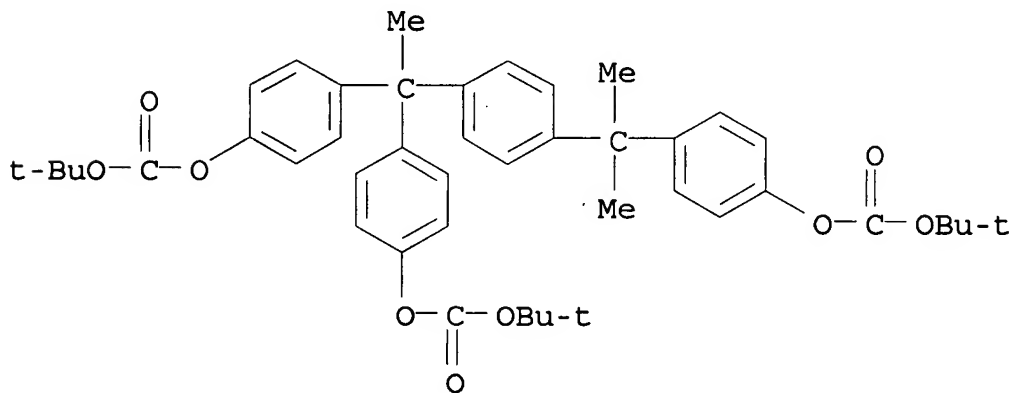
19940714. PRIORITY: JP 1993-197813 19930715; JP 1993-253740 19930916; JP 1993-261875 19930924.

AB Pos.-tone and neg.-tone chem. amplified **resist** compns. comprising: (a-1) a blocked resin, (a-2) a combination of an alkali-sol. resin and a dissoln. controlling agents, or (a-3) a combination of an alkali-sol. resin and a crosslinking agent, (b) a photoacid generator, and (c) specific kinds of solvents. The both pos.-tone and neg.-tone **resist** compns. exhibits superior sensitivity, high resoln. capability, and excellent storage stability, and can be excellently applied esp. to large sized substrates by spin-coating for producing excellently shaped patterns by irradiation. The compns. can be used with advantage as a chem. amplified **resist** for the manuf. of semiconductor devices or integrated circuits.

IT 151533-21-0  
(dissoln. controlling agent; Chem. amplified **resist** compn.)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

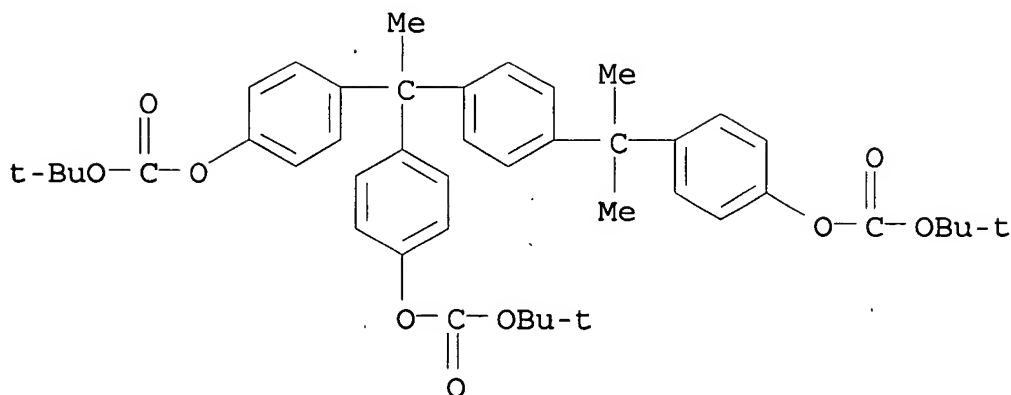
ST chem amplified **resist**; dissoln controlling agent resin combination; crosslinking agent resin combination; solvent **photoresist** semiconductor integrated circuit

IT Semiconductor devices  
(Chem. amplified **resist** compn.)

IT Electric circuits  
(integrated, Chem. amplified **resist** compn.)

IT **Resists**  
(photo-, Chem. amplified **resist** compn.)

- IT 95418-59-0D, hydrolyzed 147625-42-1  
(Chem. amplified **resist** compn.)
- IT 3089-11-0  
(crosslinking agent; Chem. amplified **resist** compn.)
- IT 117458-06-7 **151533-21-0**  
(dissoln. controlling agent; Chem. amplified **resist** compn.)
- IT 97-64-3, Ethyl lactate 123-86-4 123-92-2, Iso-amyl acetate  
539-82-2 638-11-9, Isopropyl butyrate 638-49-3, Amyl formate  
7778-85-0, Propylene glycol dimethyl ether 52125-53-8, Propylene  
glycol ethyl ether 84540-57-8, Propylene glycol methyl  
etheracetate  
(solvent; Chem. amplified **resist** compn.)
- L70 ANSWER 51 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 123:97971 Chemical amplification radiation **resist**. Kajita,  
Tooru; Suzuki, Masamutsu; Oota, Toshuki; Tsuji, Akira (Japan  
Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07128852  
A **19950519** Heisei, 19 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1993-291521 19931028.
- GI For diagram(s), see printed CA Issue.
- AB A chem. amplification radiation **resist** showing improved  
sensitivity, pattern shape, resoln., and heat resistance comprises a  
resin and a compd. represented by the formula  $R_1S(CR_2R_3)SO_2R_4$ , I, or  
II ( $R_1$  = H or an org. group;  $R_2$ ,  $R_3$  = H, halogen, or an org. group;  
 $R_4$  = an org. group;  $R_5$  = a diazo group or a divalent org. group  
forming a 3-8-membered C or heterocyclic ring;  $R_6$  = a divalent org.  
group) as a radiation-sensitive acid-generating agent.
- IT **151533-21-0P**  
(prepn. and use as soly.-controlling agent in chem. amplification  
radiation **resists**)
- RN 151533-21-0 HCA
- CN Carbonic acid, [1-[4-[1-[4-[[1,1-dimethylethoxy)carbonyl]oxy]phenyl  
]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-028  
ICS G03F007-004; G03F007-038; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST chem amplification radiation **resist** acid generation
- IT **Resists**  
(chem. amplification; contg. org. sulfonyl compds. as radiation-sensitive acid-generating agents)
- IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9, Triphenylsulfonium trifluoromethanesulfonate  
(acid-generating agent in chem. amplification radiation **resists**)
- IT 98-92-0, Nicotinamide 101-80-4, 4,4'-Diaminodiphenyl ether 3089-11-0, Hexakis(methoxymethyl)melamine 29838-16-2  
(chem. amplification radiation **resists** contg. org. sulfonyl compds. as acid-generating agents and)
- IT 59662-65-6P 87228-66-8P 107536-13-0P 165457-49-8P 165457-50-1P 165457-51-2P  
(prepn. and use as acid-generating agent in chem. amplification radiation **resists**)
- IT 117458-06-7P 151533-21-0P  
(prepn. and use as soly.-controlling agent in chem. amplification radiation **resists**)
- IT 24979-70-2DP, Poly(p-hydroxystyrene), tert-butoxysulfonylated and trimethylsilylated 24979-74-6P, p-Hydroxystyrene-styrene copolymer  
(prepn. and use in chem. amplification radiation **resists**)

L70 ANSWER 52 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:70366 **Resist** coating compositions. Murata, Makoto; Oota, Toshuki; Tsuji, Akira (Japan Synthetic Rubber Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07036190 A 19950207 Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-197814 19930715.

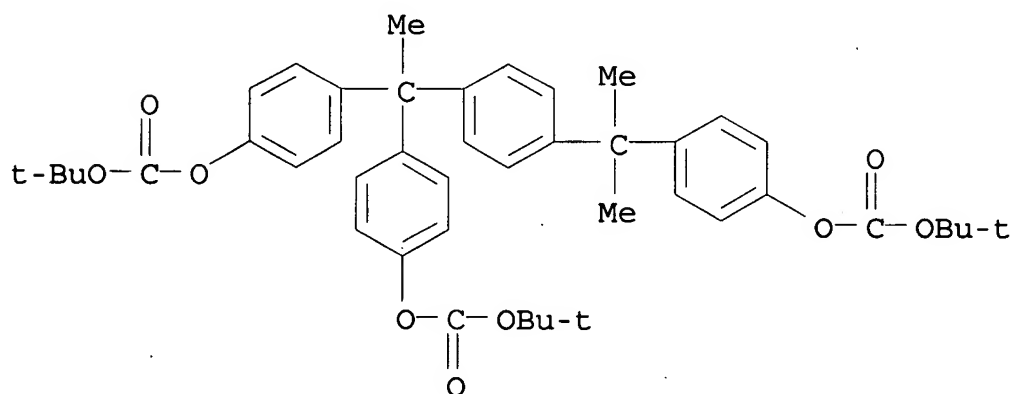
AB The title compns., used in the pattern formation utilizing the change in the soly. of the radiation-exposed area in the developing soln. caused by the chem. change catalyzed by the acid generated by irradiation, employ propylene glycol dialkyl ether as a solvent. A pos.-working **resist** coating compn. comprising poly(hydroxystyrene) partially substituted with tert-butoxycarbonyl group, triphenylsulfonium triflate, and propylene glycol di-Me ether gave a high resolu. pattern with good profile, and showed good storage stability.

IT 151533-21-0P

(dissoln. inhibitor; **resist** coating compn. using propylene glycol dialkyl ether as solvent)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST **resist** coating compn solvent; propylene glycol dialkyl ether **resist**

IT **Resists**

(radiation-sensitive, **resist** coating compn. using propylene glycol dialkyl ether as solvent)

IT 117458-06-7P 151533-21-0P

(dissoln. inhibitor; **resist** coating compn. using propylene glycol dialkyl ether as solvent)

IT 59269-51-1DP, Poly(hydroxystyrene), butoxycarbonylated

95418-59-0P, p-tert-Butoxystyrene-styrene copolymer

(**resist** coating compn. using propylene glycol dialkyl ether as solvent)

IT 7778-85-0, Propylene glycol dimethyl ether

(**resist** coating compn. using propylene glycol dialkyl ether as solvent)

L70 ANSWER 53 OF 65 HCA COPYRIGHT 2007 ACS on STN

123:44372 Positive-working **resist** composition and patterning using same. Tanaka, Sachiko; Kumada, Teruhiko; Horibe, Hideo; Kubota, Shigeru; Hizuka, Juji (Mitsubishi Electric Corp, Japan). Jpn. Kokai Tokkyo Koho JP 06242607 A 19940902 Heisei, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-28880 19930218.

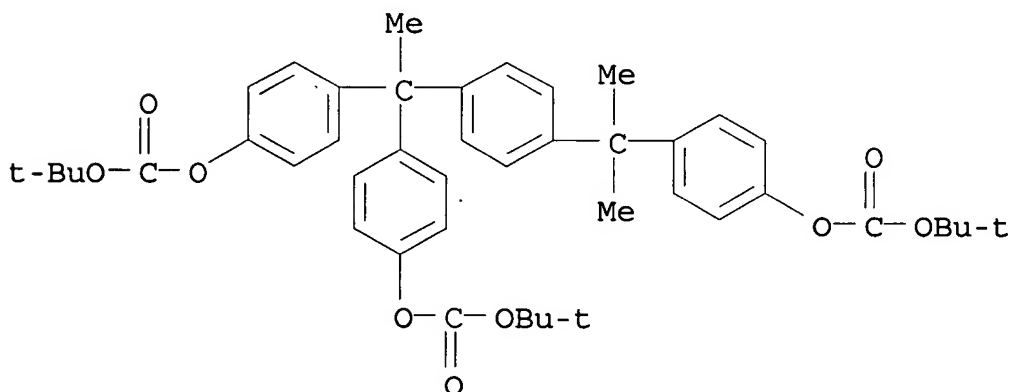
AB The title compn. comprises (1) 40-90% polymer compd. in which 5-50 mol% of groups providing alk. soly. is substituted with protective groups decomposable by an acid, (2) 10-55% compd. which becomes alk. sol. upon decompn. by an acid, and (3) 0.03-15% compd. forming an acid upon irradiation of light. This compn. provides a large soly. ratio of exposed and nonexposed regions of the **resist** film with a developer.

IT 151533-21-0 153041-55-5 163916-08-3  
163916-09-4

(pos.-working **resist** compn. and patterning using same)

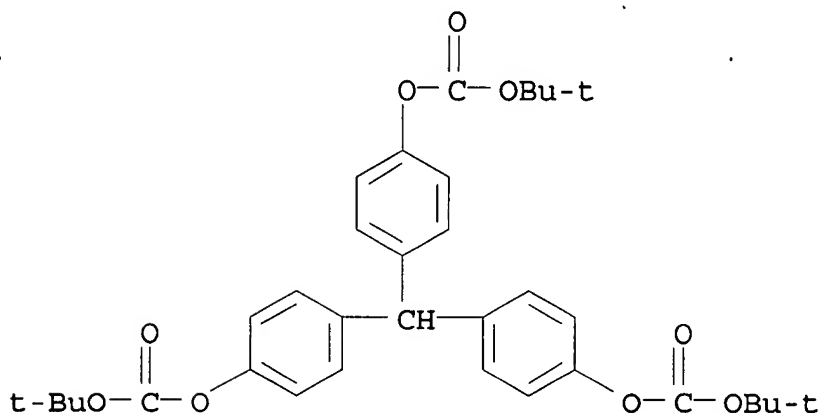
RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



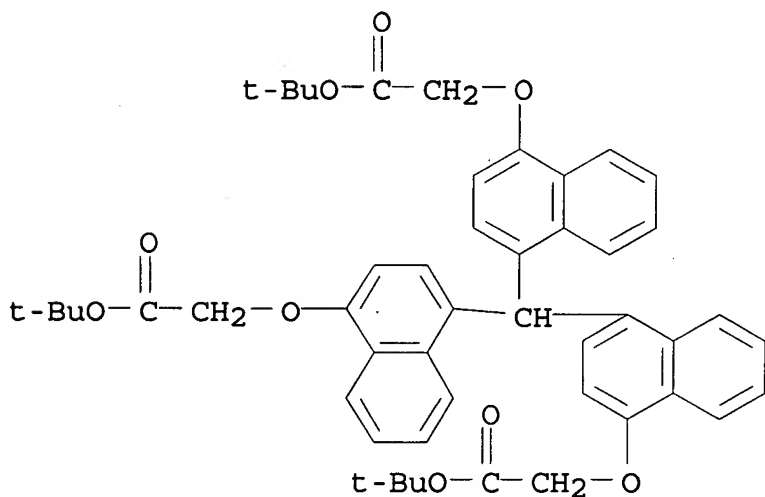
RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



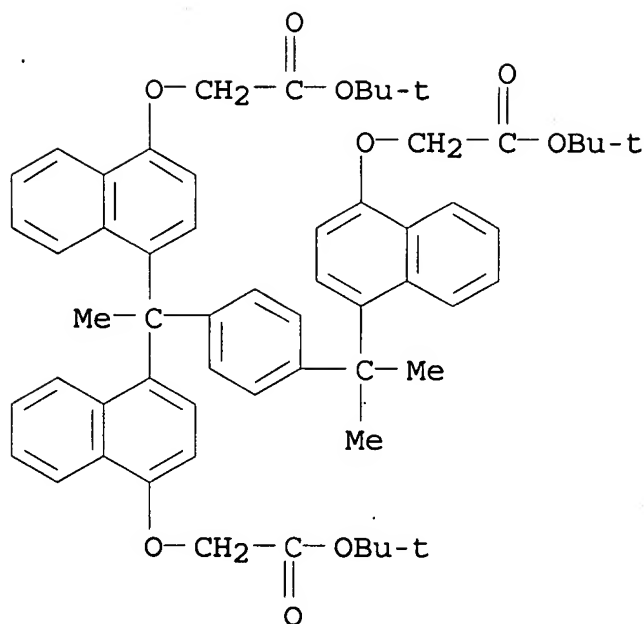
RN 163916-08-3 HCA

CN Acetic acid, 2,2',2''-[methylidynetris(4,1-naphthalenediylloxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 163916-09-4 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-1-naphthalenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-naphthalenediylloxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS G03F007-004; G03F007-029; G03F007-30; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST **resist** compn pos working
- IT **Resists**  
(photo-, pos.-working, compn. and patterning using same)
- IT 437-13-8, Triphenylsulfonium tetrafluoroborate 6542-67-2,  
2,4,6-Tris(trichloromethyl)triazine 57840-38-7, Triphenylsulfonium  
hexafluoroantimonate 66003-76-7, Diphenyliodonium triflate  
66003-78-9, Triphenylsulfonium triflate 84563-54-2 121172-98-3,  
p-Nitrobenzyl-9,10-dimethoxyanthracene-2-sulfonate 130698-17-8,  
Triphenylsulfonium tetrafluorophosphate 163915-96-6  
(pos.-working **resist** compn. and patterning using same)
- IT 117458-06-7 139254-88-9 143897-56-7 146969-18-8  
**151533-21-0 153041-55-5 163915-97-7**  
163915-98-8 163915-99-9 163916-00-5 163916-01-6 163916-02-7  
163916-03-8 163916-04-9 163916-05-0 163916-06-1 163916-07-2  
**163916-08-3 163916-09-4 164177-79-1**  
164177-80-4 164177-81-5 164177-82-6 164177-83-7 164177-84-8  
(pos.-working **resist** compn. and patterning using same)

L70 ANSWER 54 OF 65 HCA COPYRIGHT 2007 ACS on STN  
123:22183 Positive working photosensitive composition. Aoai, Toshiaki;  
Yamanaka, Tsukasa; Kokubo, Tadayoshi (Fuji Photo Film Co., Ltd.,  
Japan). Ger. Offen. DE 4405108 A1 19940825, 71 pp.  
(German). CODEN: GWXXBX. APPLICATION: DE 1994-4405108 19940217.



PRIORITY: JP 1993-51222 19930218; JP 1993-111129 19930415.

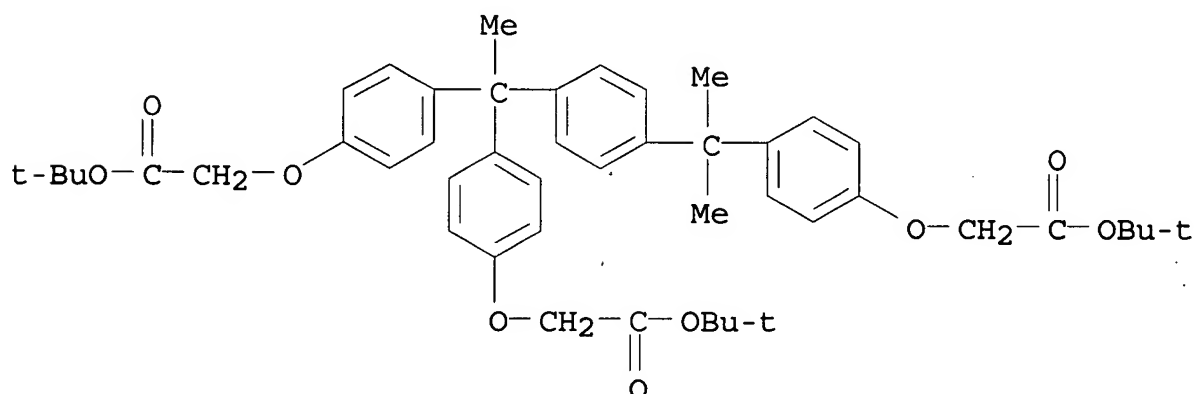
AB The title material comprises a binder resin, a photoacid generator, and low mol. wt. acid-splittable dissoln. inhibitor where the dissoln. inhibitor is selected from: (1) a compd. contg.  $\geq 2$  acid-splittable groups with a distance of  $\geq 10$  atoms between 2 acid-splittable groups; and (2) a compd. contg.  $\geq 3$  acid-splittable groups with a distance of  $\geq 9$  atoms between 2 acid-splittable groups. The material has improved photosensitivity, soly., storage stability, and thermal stability.

IT 153698-54-5 161822-25-9

(dissoln. inhibitor for photosensitive compn.)

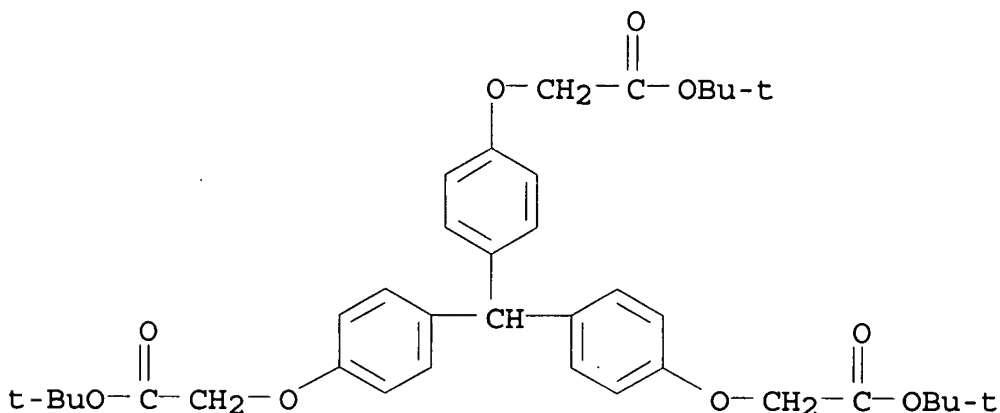
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

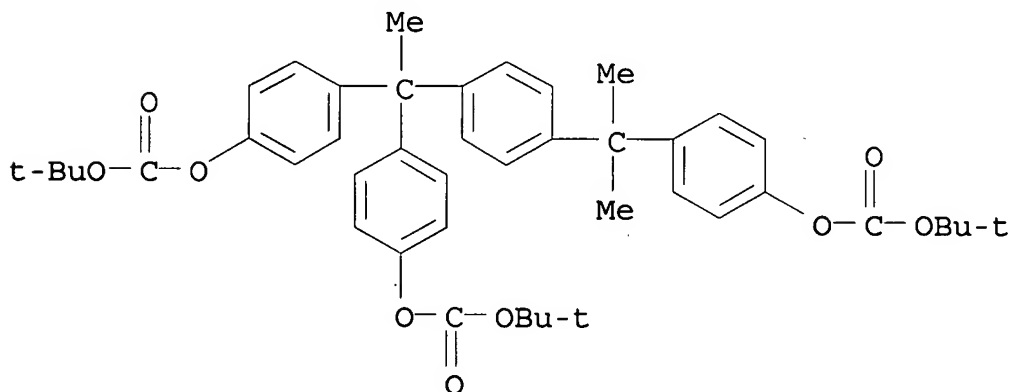


RN 161822-25-9 HCA

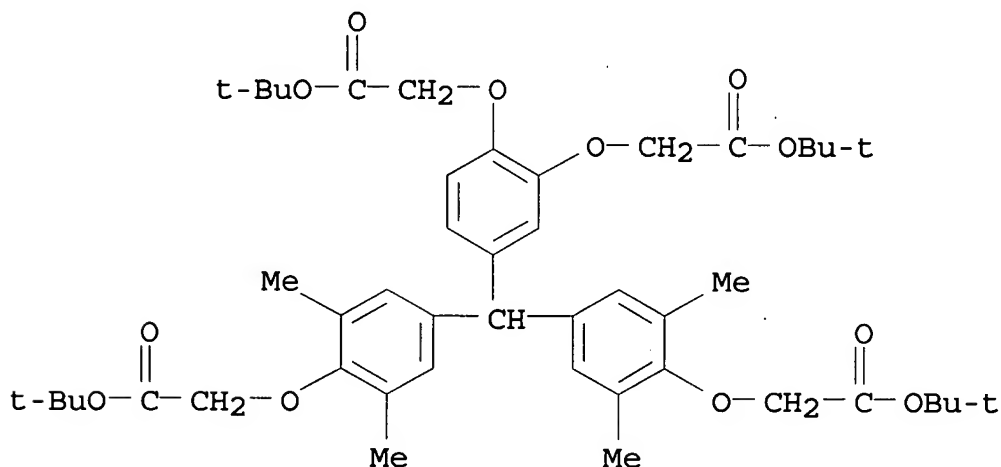
CN Acetic acid, 2,2',2''-[methylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS C08L025-18
- CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT **Resists**  
(photo-, dissoln. inhibitor)
- IT 153698-54-5 153698-60-3 153698-62-5 153698-63-6  
161822-25-9 161822-26-0 162181-27-3  
(dissoln. inhibitor for photosensitive compn.)
- L70 ANSWER 55 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 122:303027 Photosensitive resin composition containing photodecomposable sulfonimide compound. Kawamura, Koichi; Kobayashi, Fumikazu; Yamanaka, Tsukasa (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07028245 A 19950131 Heisei, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-169032 19930708.
- AB The compn. contains a sulfonimide compd. R1SO2NR3SO2R2 [R1-3 = (substituted) arom. group, (substituted) alkyl] and a polymer binder which is water unsol. and alkali-sol. or swellable, optionally contg. a compd. having  $\geq 1$  C-O-C or C-O-Si bond severed in presence of acids, a compd. having  $\geq 2$  crosslinkable groups in presence of acids, a polymerizable ethylenic compd., or a color-changeable compd. by acids or radicals. The compn. showed high sensitivity and gave high-resoln. **resist** images.
- IT 151533-21-0  
(photosensitive resin compn. contg. photodecomposable sulfonimide compd. as photoacid or photoradical generator)
- RN 151533-21-0 HCA
- CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

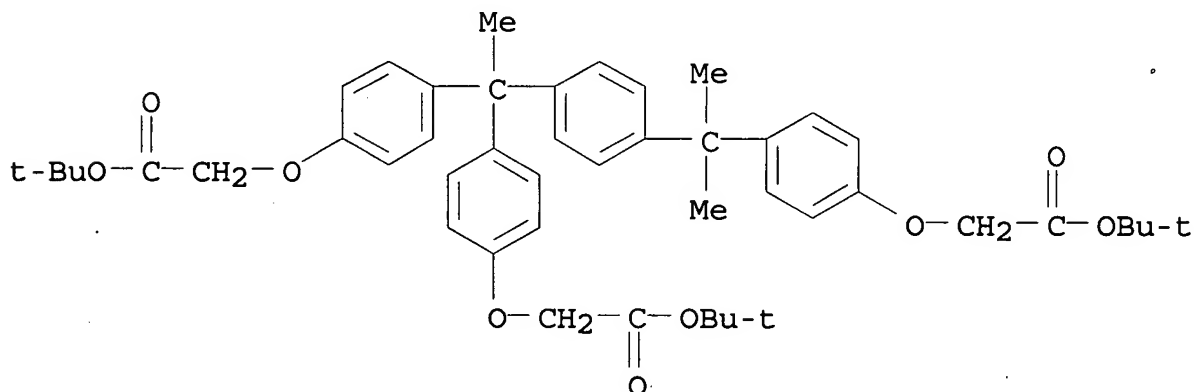


- ICS G03F007-00; G03F007-004; G03F007-027; G03F007-028; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST photosensitive resin sulfonimide photoacid generator; imaging  
**photoresist** photodecomposable sulfonimide; pos  
**photoresist** sulfonimide photoradical generator  
 IT **Resists**  
 (photo-, photosensitive resin compn. contg. photodecomposable  
 sulfonimide compd. as photoacid or photoradical generator)  
 IT 4986-89-4, Pentaerythritol tetraacrylate 55918-70-2,  
 m-Cresol-p-cresol copolymer 65697-21-4, Benzyl  
 methacrylate-methacrylic acid copolymer **151533-21-0**  
 (photosensitive resin compn. contg. photodecomposable sulfonimide  
 compd. as photoacid or photoradical generator)
- L70 ANSWER 56 OF 65 HCA COPYRIGHT 2007 ACS on STN  
 122:278146 Positive-working **photoresist** composition with  
 durability, high sensitivity, and high resolution. Aoso, Toshiaki;  
 Yamanaka, Tsukasa; Kokubo, Tadayoshi (Fuji Photo Film Co Ltd,  
 Japan). Jpn. Kokai Tokkyo Koho JP 06266109 A **19940922**  
 Heisei (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-54121  
 19930315.
- AB The title compn. comprises a solvent with b.p. 130-155° and a  
 dissoln. inhibitor having ≥2 groups capable of dissoln. upon  
 reaction with an acid.
- IT **153698-51-2 153698-54-5 153698-55-6**  
 (pos.-working **photoresist** compn. with durability, high  
 sensitivity, and high resoln.)
- RN 153698-51-2 HCA  
 CN Acetic acid, 2,2'-[[4-[bis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-  
 3,5-dimethylphenyl]methyl]-1,2-phenylene]bis(oxy)]bis-,  
 bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



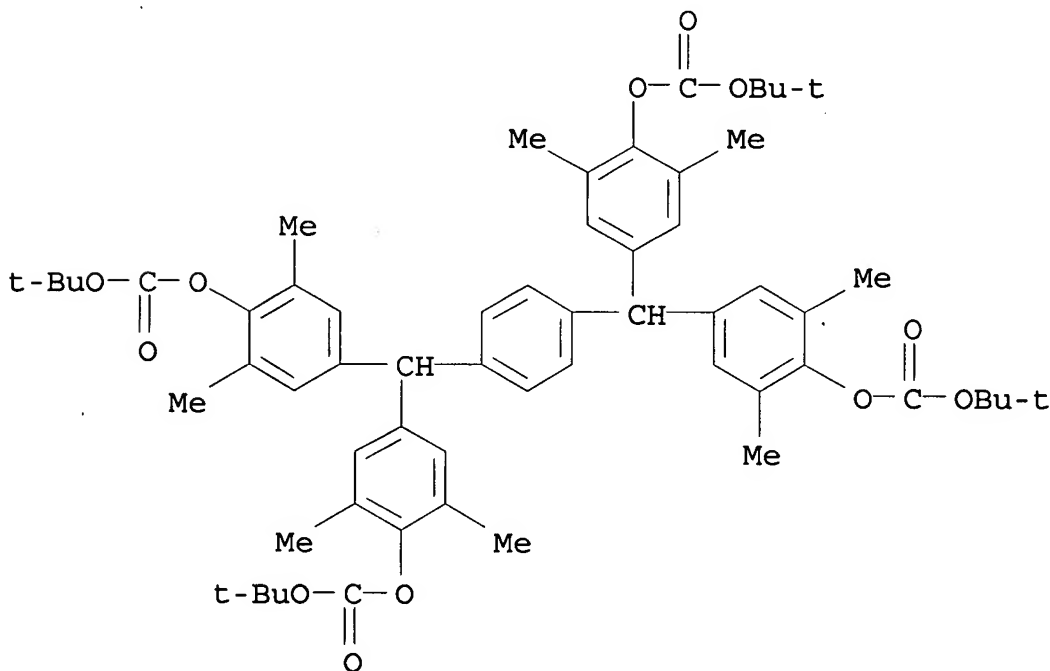
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



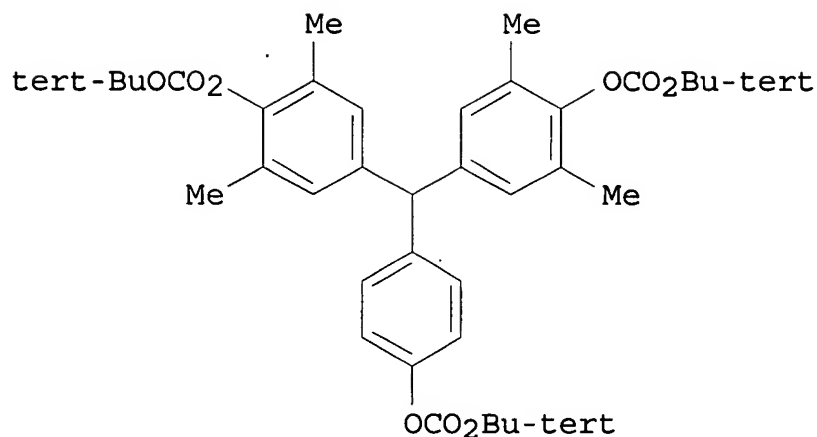
RN 153698-55-6 HCA

CN Carbonic acid, (1,4-phenylenedimethylidyne)tetrakis(2,6-dimethyl-4,1-phenylene) tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-004; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 76  
ST chem amplification pos working **photoresist**  
IT Electric circuits  
(integrated, pos.-working **photoresist** compn. with  
durability, high sensitivity, and high resoln.)  
IT **Resists**  
(photo-, pos.-working, pos.-working **photoresist** compn.  
with durability, high sensitivity, and high resoln.)  
IT Lithography  
(photo-, submicron, pos.-working **photoresist** compn.  
with durability, high sensitivity, and high resoln.)  
IT 153698-48-7 153698-50-1 **153698-51-2** 153698-52-3  
**153698-54-5 153698-55-6** 153698-56-7  
153698-57-8 153698-62-5 153698-63-6 153840-05-2 159293-88-6  
162744-66-3  
(pos.-working **photoresist** compn. with durability, high  
sensitivity, and high resoln.)  
IT 153698-53-4P 153698-58-9P 153698-65-8P 161715-12-4P  
(pos.-working **photoresist** compn. with durability, high  
sensitivity, and high resoln.)  
L70 ANSWER 57 OF 65 HCA COPYRIGHT 2007 ACS on STN  
122:201259 Positive-working photosensitive compositions. Aoso,  
Toshiaki; Yamanaka, Tsukasa; Kokubo, Tadayoshi (Fuji Photo Film Co  
Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06266107 A **19940922**  
Heisei, 25 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1993-49258 19930310.  
GI



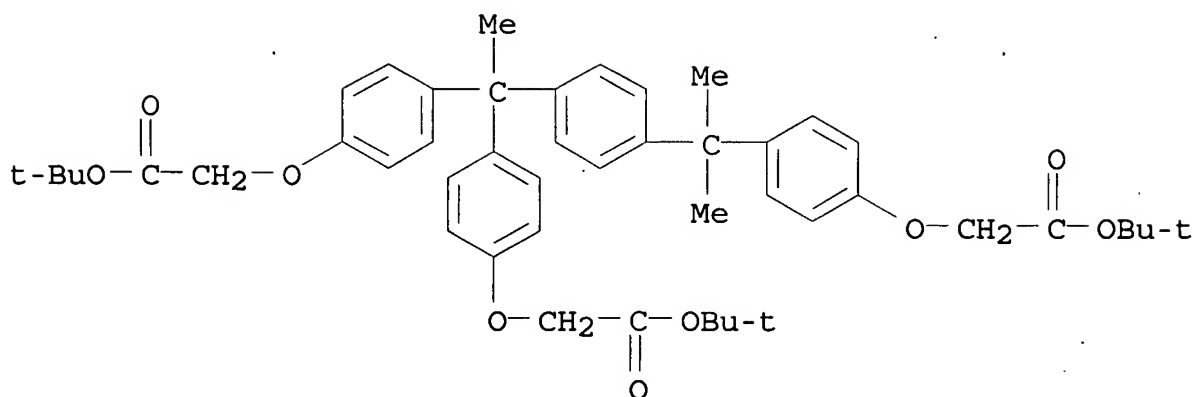
AB The title compns. contain a water-insol. and alkali-sol. resin, a compd. generating an acid by irradiation with active rays or radiations, and a dissoln. inhibitor with mol. wt.  $\leq 3000$ , whose soly. in developing solns. increases by acid, having  $\leq 3$  acid-decomposable groups branching from the same satd. C with  $\geq 9$  bonding atoms (except the decomposable group bonds) between the 2 decomposable groups in the farthest positions. A pos.-working resist comprising m-cresol-p-cresol-HCHO novolak resin,  $\text{Ph}_2\text{I}^+\text{AsF}_6^-$ , and I gave high resolu. patterns with good profile by using a KrF excimer laser.

IT 153698-54-5 159293-89-7 160457-12-5  
161715-10-2 161715-16-8

(dissoln. inhibitor; pos.-working photosensitive compns. contg. alkali-sol. resins, acid generators, and acid-decomp. dissoln. inhibitors)

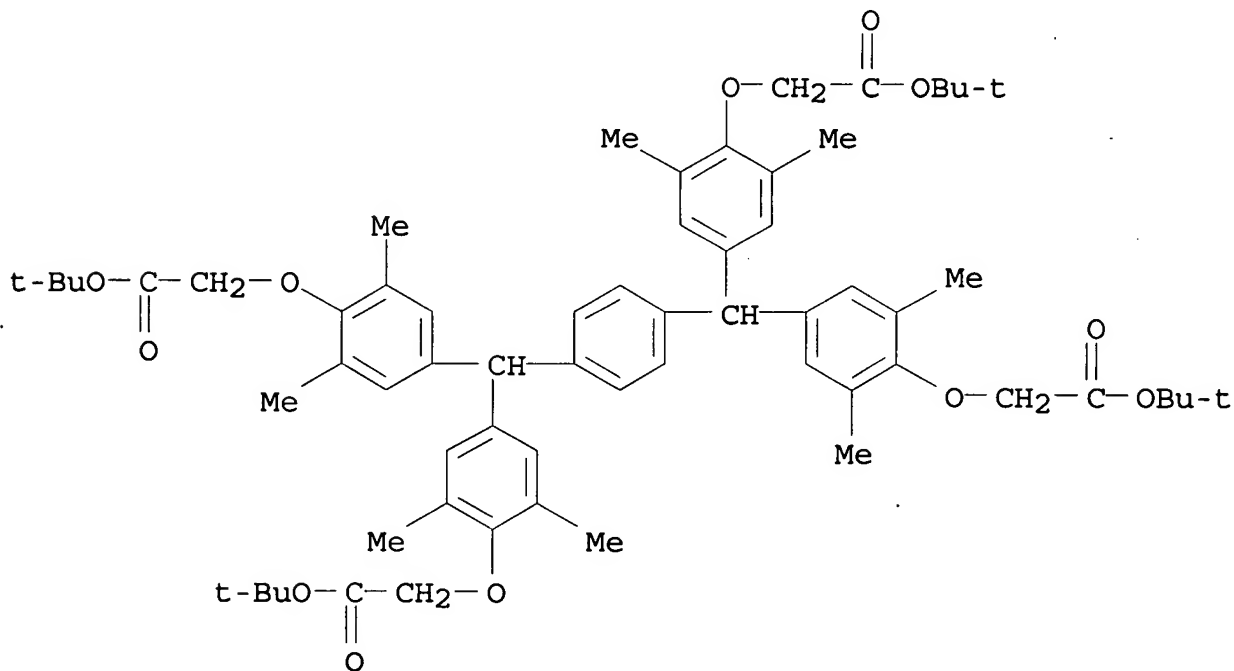
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



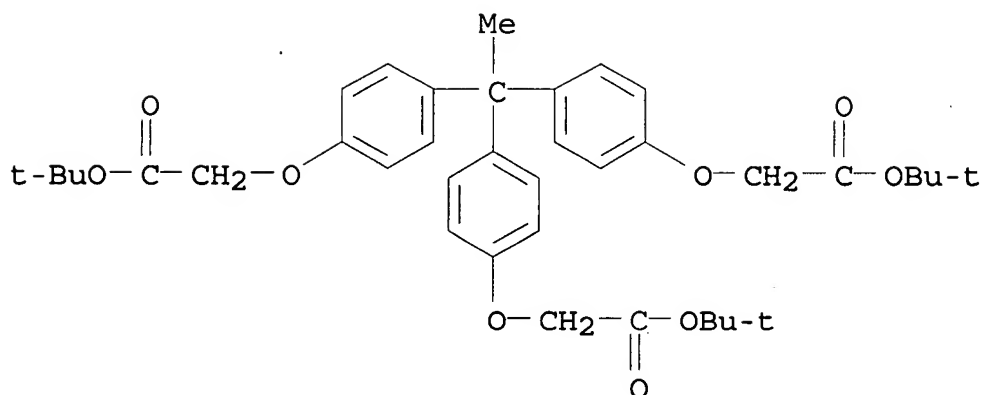
RN 159293-89-7 HCA

CN Acetic acid, 2,2',2'',2'''-[(1,4-phenylenedimethylidyne)tetrakis[(2,6-dimethyl-4,1-phenylene)oxy]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



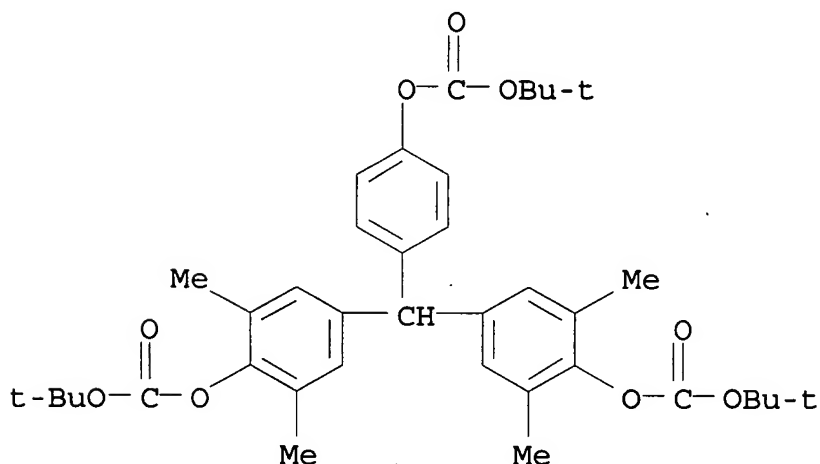
RN 160457-12-5 HCA

CN Acetic acid, 2,2',2'''-[ethylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 161715-10-2 HCA

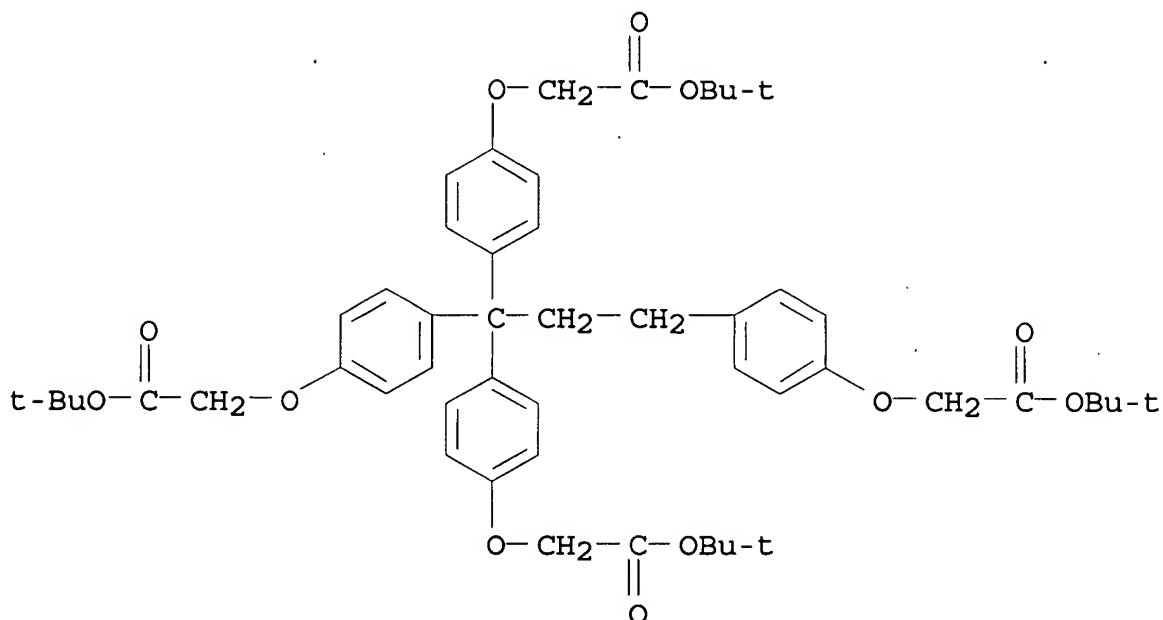
CN Carbonic acid, [[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]methylen]bis(2,6-dimethyl-4,1-phenylene) bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 161715-16-8 HCA

CN Acetic acid, 2,2',2'',2'''-[1-propanyl-3-ylidynetetrakis(4,1-phenyleneoxy)]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)





IC ICM G03F007-039

ICS G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos working **photoresist** dissoln inhibitor; alkali sol resin **photoresist**; acid generator **photoresist** pos working

IT **Resists**

(radiation-sensitive, pos.-working photosensitive compns. contg. alkali-sol. resins, acid generators, and acid-decomp. dissoln. inhibitors)

IT 153698-53-4 153698-54-5 153698-64-7 159293-89-7

159293-90-0 160457-12-5 161715-10-2

161715-11-3 161715-12-4 161715-13-5 161715-14-6 161715-15-7

161715-16-8

(dissoln. inhibitor; pos.-working photosensitive compns. contg. alkali-sol. resins, acid generators, and acid-decomp. dissoln. inhibitors)

L70 ANSWER 58 OF 65 HCA COPYRIGHT 2007 ACS on STN

122:92625 Structural design of acid-decomposable dissolution inhibitors for a 3-components positive CA **resist**. Aoai, Toshiaki; Yamanaka, Tsukasa; Kokubo, Tadayoshi (Research Lab., Fuji Photo Film Co. Ltd., Shizuoka, 421-03, Japan). Proceedings of SPIE-The International Society for Optical Engineering, 2195(Advances in Resist Technology and Processing XI), 111-25 (English) 1994 . CODEN: PSISDG. ISSN: 0277-786X.

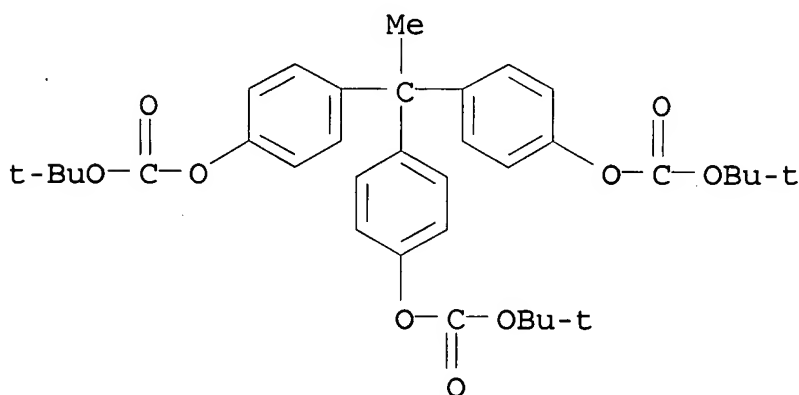
AB A design of 3-components pos. chem. amplification (CA) **resist** system (consists of acid-decomposable low mol. dissoln. inhibitor / photo-acid generator (PAG) / phenolic resin binder) was investigated. A series of model inhibitors were newly synthesized and examd. for the structural influence to their inhibition efficiency on novolak (NVK) dissoln. The hydrophobicity and the mol. size of the inhibitor as well as the dispersivity of the acid decomposable groups in the mol. were found influential. By maximizing those parameters, the inhibitor with improved inhibition by three orders of magnitude compared to the previously known ones was obtainable. This even enabled the use of poly(p-hydroxystyrene) (PHS) as a binder, generally known to suffer from poor inhibition, in place of NVK. A mol. conformational anal. as well as IR spectrum anal. were carried out on the key materials for discussion of the inhibition mechanism. A mol. interaction model between the inhibitor and the hydrophilic site of binder, a similar model to DNQ-PAC / NVK system, was proposed for the mechanism. The 3-components **resist** samples formulated with simple phenolic binders and the improved inhibitor performed well on imaging under KrF excimer laser exposure. A 0.24  $\mu$ m L/S image with vertical profile was obtainable.

IT 143213-46-1P 151533-21-0P 153698-54-5P  
160457-12-5P

(design and synthesis of acid-decomposable dissoln. inhibitors for 3-component pos. chem.-amplified **resist**)

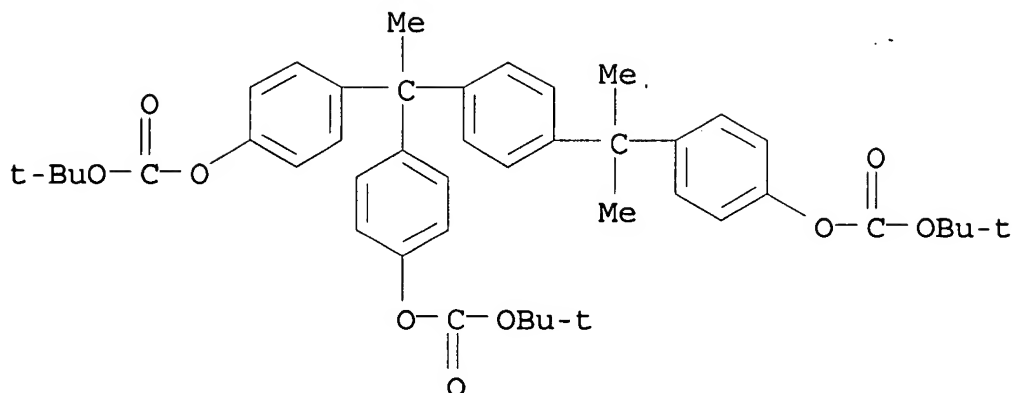
RN 143213-46-1 HCA

CN Carbonic acid, ethylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



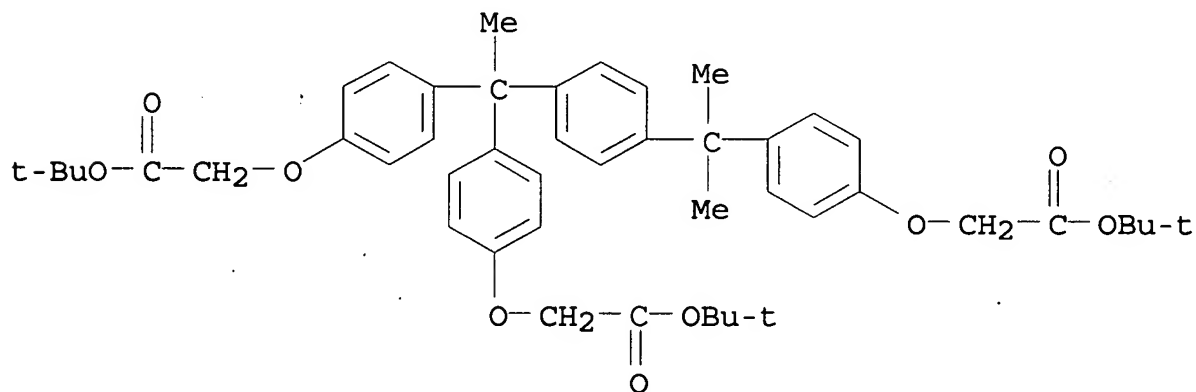
RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



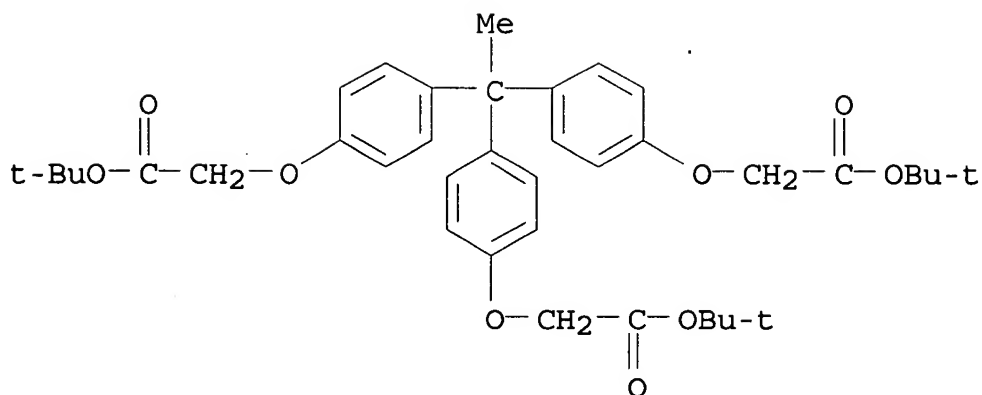
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 160457-12-5 HCA

CN Acetic acid, 2,2',2''-[ethylidynetris(4,1-phenyleneoxy)]tris-, tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



## Resists

IT 6627-89-0P 36304-22-0P 117458-06-7P 139290-12-3P

143213-46-1P      145531-14-2P      146969-18-8P

**151533-21-0P 153698-54-5P 153698-58-9P**

153698-62-5P      153698-63-6P      153698-64-7P      153698-65-8P

153840-05-2P      160457-02-3P      160457-03-4P      160457-04-5P

160457-05-6P      160457-06-7P      160457-07-8P      160457-08-9P

160457-09-0P      160457-10-3P      160457-11-4P      **160457-12-5P**

L70 ANSWER 59 OF 65 HCA COPYRIGHT 2007 ACS on STN

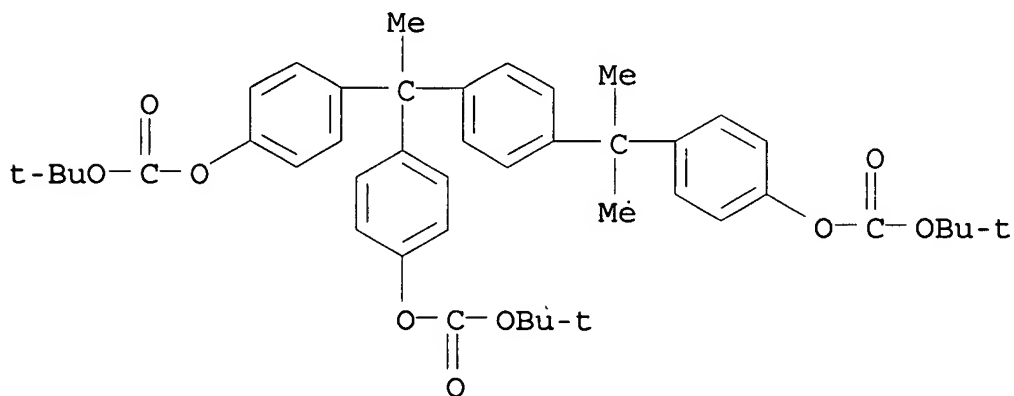
Aoso, Toshiaki; Yamanaka, Tsukasa; Uenishi, Kazuya; Kokubo, Tadayoshi (Fuji Photo Film Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 06095390 A **19940408** Heisei, 59 pp. (Japanese).

AB In the title compn. comprising an alk.-sol. resin, a photosensitive acid-generating compd., a dissoln. retarding agent for in an acid, the dissoln. retarding agent is a polycyclic arom. compd.,  $\geq 1$  mol of which is a compd. contg. an alk.-sol. group.

IT 151533-21-0 159293-89-7

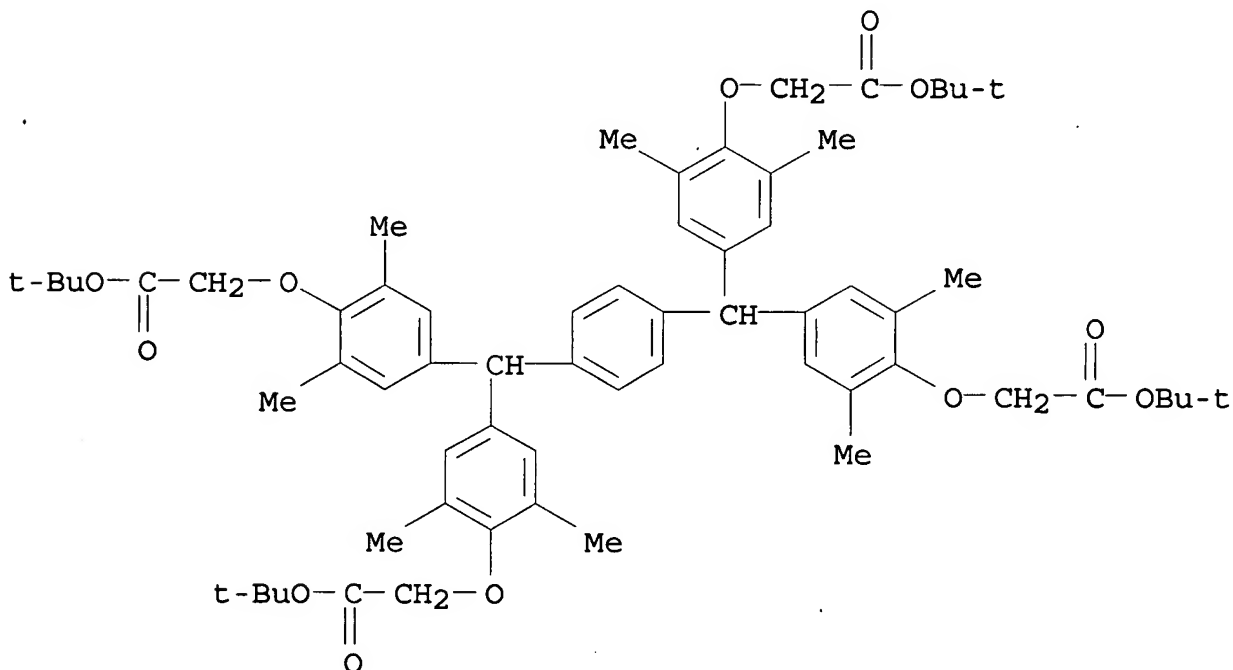
RN. 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 159293-89-7 HCA

CN Acetic acid, 2,2',2'',2'''-[(1,4-phenylenedimethylidyne)tetrakis[(2,6-dimethyl-4,1-phenylene)oxy]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-039

ICS G03F007-00; G03F007-004; G03F007-028; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)

ST **resist** compn pos chem amplification

IT Phenolic resins, uses  
(novolak, three-component chem. amplification-type pos.-working  
**resist** compn.)

IT **Resists**  
(photo-, three-component chem. amplification-type pos.-working  
**resist** compn.)

IT 136355-24-3DP, tetrahydropyranyl ethers 153840-05-2P  
159293-87-5P  
(three-component chem. amplification-type pos.-working  
**resist** compn.)

IT 27029-76-1 57900-42-2 66003-78-9 112504-03-7 123236-78-2  
124737-97-9 142096-70-6 144089-15-6 **151533-21-0**  
153698-46-5 153698-52-3 153698-63-6 153698-64-7 153698-65-8  
153698-66-9 153698-67-0 159293-88-6 **159293-89-7**  
159293-90-0  
(three-component chem. amplification-type pos.-working  
**resist** compn.)

L70 ANSWER 60 OF 65 HCA COPYRIGHT 2007 ACS on STN

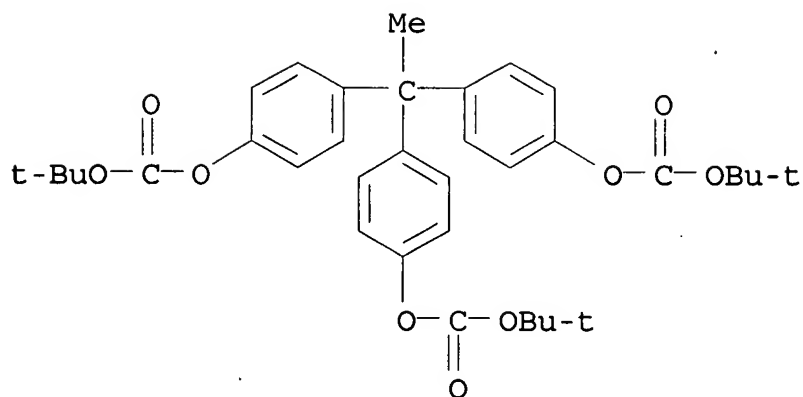
120:232069 **Resist** coating composition. Murata, Makoto; Ota,  
Toshiyuki; Yumoto, Yoshiji; Miura, Takao (Japan Synthetic Rubber  
Co., Ltd., Japan). Eur. Pat. Appl. EP 562819 A2 **19930929**,  
30 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English).  
CODEN: EPXXDW. APPLICATION: EP 1993-302193 19930323. PRIORITY: JP  
1992-94956 19920323.

AB A pos. **resist** coating compn. comprises (a) an alkali-sol.  
resin, (b) at least one radiation-sensitive acid-forming agent  
selected from the group consisting of onium salts, halogen-contg.  
compds., sulfones, nitrobenzyl compds., and sulfonates, (c) a compd.  
which has the property of controlling the alkali soly. of the  
alkali-sol. resin and which is decompd. in the presence of an acid  
to develop either the property of reducing or losing the effect of  
controlling the alkali soly. of the alkali-sol. resin or the  
property of promoting the alkali soly. of the alkali-sol. resin, and  
(d) at least one solvent selected from Me 3-methoxypropionate and Et  
3-ethoxypropionate.

IT **143213-46-1 151533-21-0**  
(pos. radiation-sensitive **resists** contg. alkali-sol.  
resins, acid-controlling agents and)

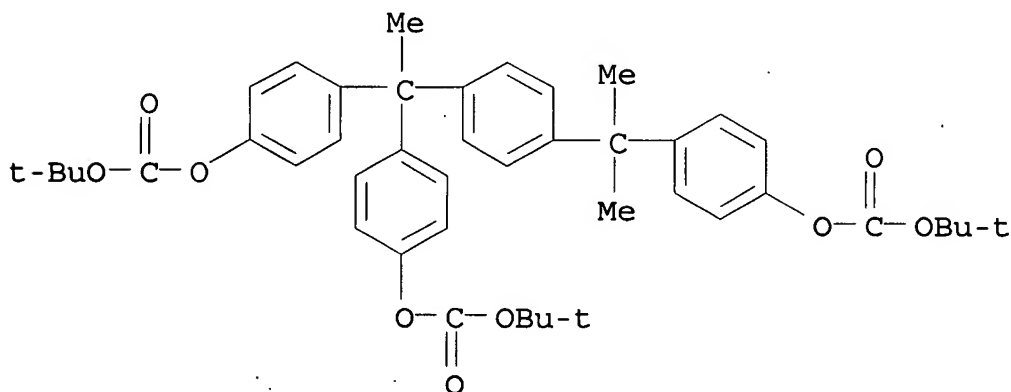
RN 143213-46-1 HCA

CN Carbonic acid, ethylidynetri-4,1-phenylene tris(1,1-dimethylethyl)  
ester (9CI) (CA INDEX NAME)



RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **resist** acid forming agent; alkali sol resin pos **resist**

IT **Resists**

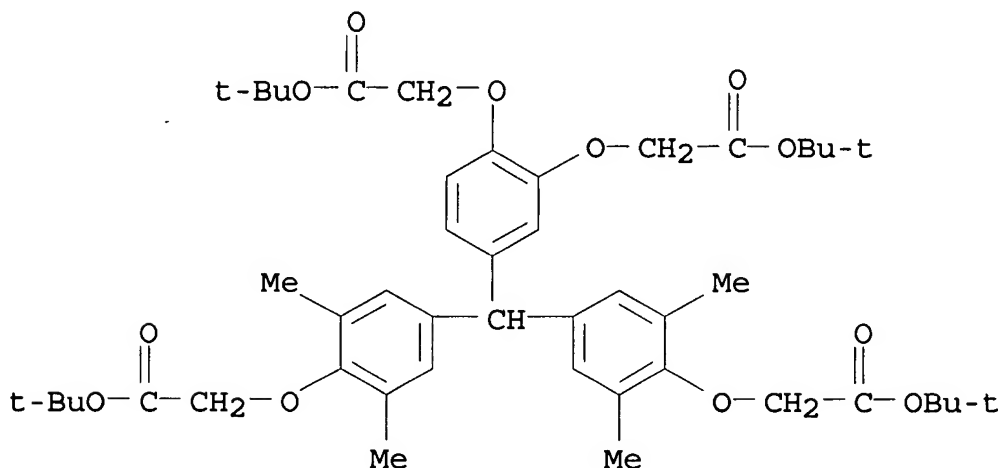
(radiation-sensitive, pos.-working, contg. alkali-sol. resins, acid-forming agents, and soly.-controlling agents)

IT 59269-51-1D, Poly(hydroxystyrene), acetyl-modified 59269-51-1D, Poly(hydroxystyrene), tetrahydropyranyl-modified 59269-51-1D, Poly(hydroxystyrene), trimethylgermyl-modified 59269-51-1D, Poly(hydroxystyrene), trimethylsilyl-modified 59269-51-1D, Poly(hydroxystyrene), tert-Bu acetate-modified 95418-59-0, p-tert-Butoxystyrene-styrene copolymer

- (pos. radiation-sensitive **resists** contg. acid-forming agents, soly.-controlling agents and)
- IT 117458-06-7 127175-62-6 143213-46-1 151533-21-0  
154218-37-8
- (pos. radiation-sensitive **resists** contg. alkali-sol. resins, acid-controlling agents and)
- IT 97-64-3, Ethyl 2-hydroxypropionate 626-19-7, 1,3-Benzenedicarboxaldehyde 763-69-9, Ethyl 3-ethoxypropionate 3739-67-1 3852-09-3, Methyl 3-methoxypropionate 4324-39-4, Ethyl 2-methoxypropionate 138424-91-6 154218-38-9
- (pos. radiation-sensitive **resists** contg. alkali-sol. resins, acid-forming agents, soly.-controlling agents and)
- IT 3406-03-9 3584-23-4 20444-09-1 66003-78-9 119666-27-2  
126615-05-2
- (pos. radiation-sensitive **resists** contg. alkali-sol. resins, soly.-controlling agents and)
- L70 ANSWER 61 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 120:204700 Positive-type light-sensitive composition. Yamanaka, Tsukasa; Aoai, Toshiaki; Uenichi, Kazuya; Kondo, Shunichi; Kokubo, Tadayoshi (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 541112 A1 19930512, 81 pp. DESIGNATED STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1992-119043 19921106. PRIORITY: JP 1991-319600 19911108; JP 1992-47705 19920205; JP 1992-47782 19920205; JP 1992-166685 19920603; JP 1992-299093 19921013.
- AB A pos.-type light-sensitive compn. useful in manuf. of a lithog. plate or a semiconductor device and having less layer shrinkage by baking after exposing, less layer decrease in developing, a good profile, and a high resolu. comprises (a) a resin which is insol. in water and sol. in an alk. aq. soln., (b) a compd. which generates an acid by irradiation with active rays or radial rays, and (c) an acid-decomposable dissoln. inhibitor, having a mol. wt. of not more than 3000 and having groups decomposable by the action of the generated acid to increase the soly. of said inhibitor in an alk. developing soln., wherein said inhibitor (c) is at least one compd. selected from the group consisting of (i) compds. having two of said acid decomposable groups which are sepd. by 10 or more bonded atoms excluding the atoms constituting the acid decomposable groups and (ii) compds. having at least three of said acid decomposable groups and two of said groups which are at the farthest positions are sepd. by 9 or more bonded atoms excluding the atoms constituting the acid decomposable groups.
- IT 153698-51-2 153698-54-5 153698-55-6
- (pos. **photoresist** compns. contg. alkali-sol. resins, photosensitive acid generators and, for lithog. plate and semiconductor device manuf.)
- RN 153698-51-2 HCA

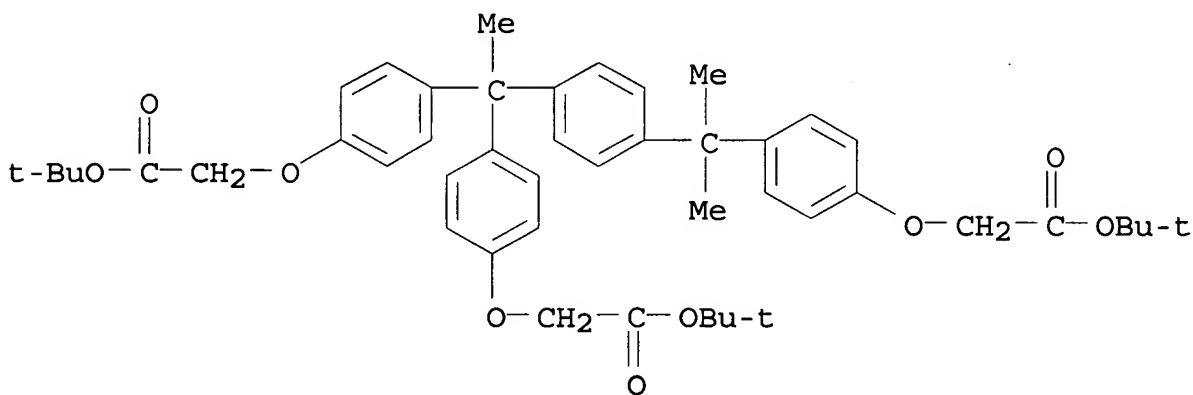


CN Acetic acid, 2,2'-[[4-[bis[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]-3,5-dimethylphenyl]methyl]-1,2-phenylene]bis(oxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



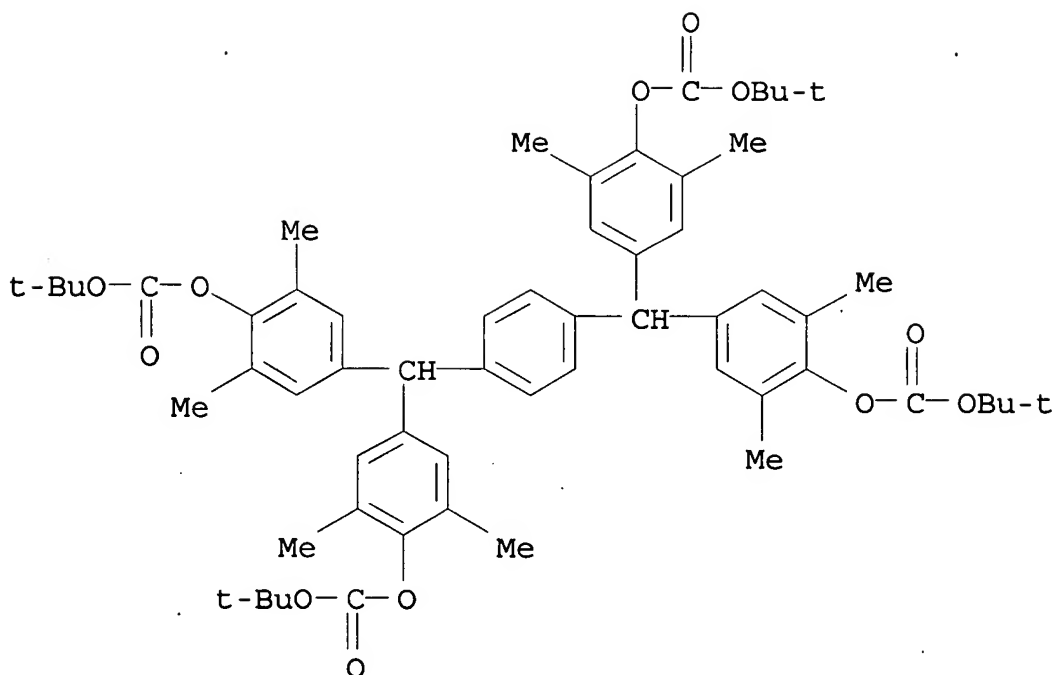
RN 153698-54-5 HCA

CN Acetic acid, 2,2'-[[1-[4-[1-[4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]-1-methylethyl]phenyl]ethylidene]bis(4,1-phenyleneoxy)]bis-, bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



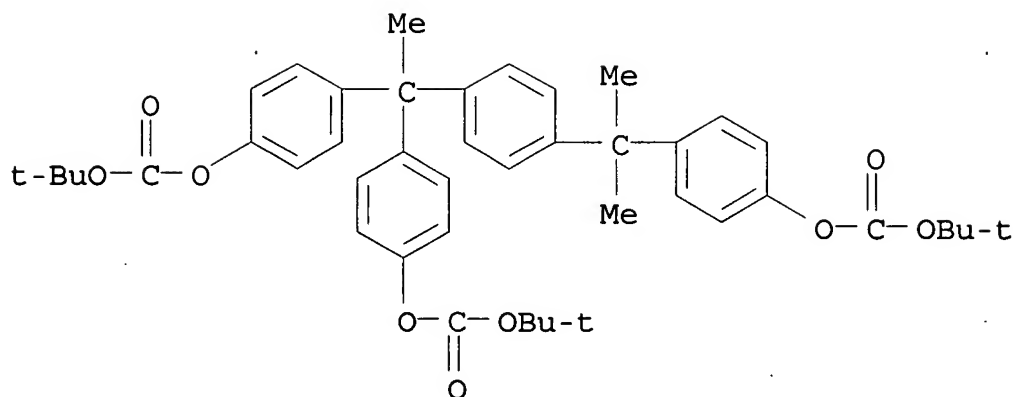
RN 153698-55-6 HCA

CN Carbonic acid, (1,4-phenylenedimethylidyne)tetrakis(2,6-dimethyl-4,1-phenylene) tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



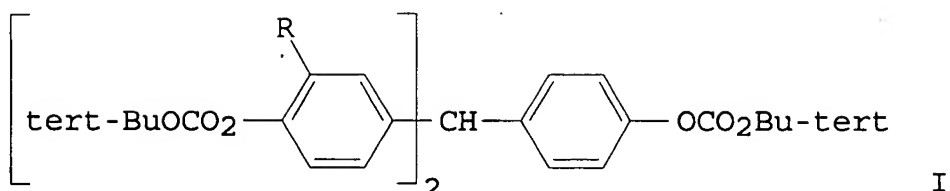
- IC ICM G03F007-004  
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 IT Lithographic plates  
 Semiconductor devices  
 (manuf. of, pos. **photoresist** compns. contg. photosensitive acid generators, alkali-sol. resins, and acid-decomposable dissoln. inhibitors for)  
 IT Phenolic resins, uses  
 (novolak, pos. **photoresist** compns. contg. photosensitive acid generators, acid-decomposable dissoln. inhibitors and, for lithog. plate and semiconductor device manuf.)  
 IT **Resists**  
 (photo-, pos., contg. photosensitive acid generators, alkali-sol. resins, and acid-decomposable dissoln. inhibitors)  
 IT 57900-42-2 59626-75-4 62613-15-4 66003-78-9 124737-97-9  
 142096-70-6 153698-46-5 153698-66-9 153698-67-0  
 (pos. **photoresist** compn. contg. alkali-sol. resins, acid-decomposable dissoln. inhibitors and, for lithog. plate and semiconductor device manuf.)  
 IT 152238-74-9 153698-48-7 153698-49-8 153698-50-1  
**153698-51-2** 153698-52-3 153698-53-4 **153698-54-5**  
**153698-55-6** 153698-56-7 153698-57-8 153698-58-9  
 153698-59-0 153698-60-3 153698-61-4 153698-62-5 153698-63-6

- 153698-64-7 153698-65-8 153840-05-2  
(pos. **photoresist** compns. contg. alkali-sol. resins,  
photosensitive acid generators and, for lithog. plate and  
semiconductor device manuf.)
- IT 24979-70-2, Poly(p-hydroxystyrene) 27029-76-1,  
m-Cresol-p-cresol-formaldehyde copolymer 112504-03-7 123236-78-2  
(pos. **photoresist** compns. contg. photosensitive acid  
generators, acid-decomposable dissoln. inhibitors and, for  
lithog. plate and semiconductor device manuf.)
- IT 153698-58-9P 153698-68-1P 153698-69-2P 153698-70-5P  
(prepn. and use of, as acid-decomposable dissoln. inhibitor for  
pos. **photoresist** compns.)
- IT 110-87-2, 3,4-Dihydro-2H-pyran 865-47-4 4466-18-6 5292-43-3,  
tert-Butylbromoacetate 24424-99-5, Di-tert-butylidicarbonate  
76937-83-2 110726-28-8 153698-47-6  
(reaction of, in prepg. acid-decomposable dissoln. inhibitor for  
pos. **photoresist** compns.)
- L70 ANSWER 62 OF 65 HCA COPYRIGHT 2007 ACS on STN  
120:204669 Positive-working **photoresist** compositions. Aoso,  
Toshiaki; Kokubo, Tadayoshi (Fuji Photo Film Co Ltd, Japan). Jpn.  
Kokai Tokkyo Koho JP 05158242 A 19930625 Heisei, 32 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-344112 19911203.
- AB The title compns. contain (a) a compd. which has  $\geq 1$  group  
decomposable by acids and of which the soly. in alk. developing  
solns. increases by the action of acids, (b) a compd. which  
generates an acid by irradiation with an active ray or radiation, and  
(c) a compd. which generates a base at  $\geq 50^\circ$ . The  
compns. show high sensitivity in deep-UV regions and are useful as  
high resolu. **photoresists**. Thus, a **photoresist**  
comprised (p-tert-BuOCO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CMe-p-C<sub>6</sub>H<sub>4</sub>CMe<sub>2</sub>C<sub>6</sub>H<sub>4</sub>OCO<sub>2</sub>Bu-tert-p,  
Ph<sub>3</sub>S<sup>+</sup>.CF<sub>3</sub>SO<sub>3</sub><sup>-</sup>, MeCPh:NOCONEt<sub>2</sub>, and a cresol-novolac resin, which  
gave a submicron pos. pattern by irradiation with far UV (254 nm).
- IT 151533-21-0  
(pos.-working **photoresist** contg.)
- RN 151533-21-0 HCA
- CN Carbonic acid, [1-[4-[1-[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl  
]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS G03F007-004; G03F007-027; G03F007-028; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST pos working **photoresist**; acid generating compd  
**photoresist**; base generating compd **photoresist**
- IT Phenolic resins, uses  
(novolak, pos.-working **photoresists** contg.)
- IT **Resists**  
(photo-, pos.-working, with high sensitivity and resolu.)
- IT 66003-78-9 91222-48-9  
(acid-generating agent, pos.-working **photoresist** contg.)
- IT 2911-38-8 21251-12-7 30289-16-8 45266-25-9 52266-32-7  
152238-75-0  
(base-generating agent, pos.-working **photoresist** contg.)
- IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer  
151533-21-0 152238-74-9  
(pos.-working **photoresist** contg.)
- L70 ANSWER 63 OF 65 HCA COPYRIGHT 2007 ACS on STN
- 120:148971 Acid-decomposable compounds and positive-working radiation-sensitive **resist** compositions using them.  
Umeda, Shinichi; Koyanagi, Takao; Kitaori, Tomoyuki; Fukunaga, Masanori; Nagasawa, Kotaro (Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 05249681 A 19930928 Heisei, 6 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-31259 19920123.

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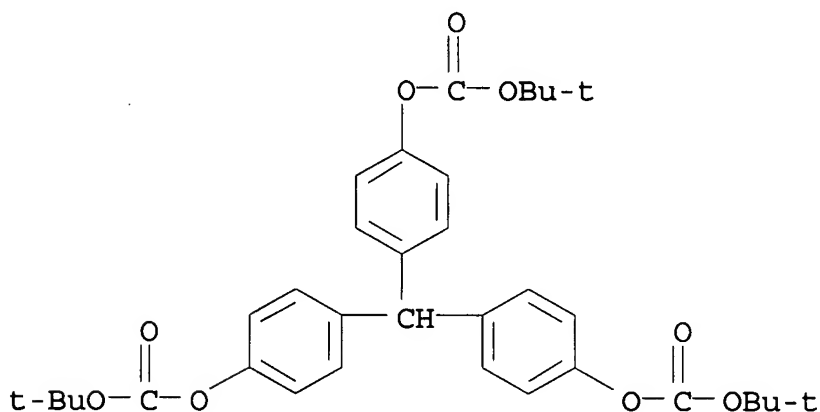
AB The title compds. have the general formula I (R = H, Me). The **resist** compns. comprise an alkali-sol. resin, a compd. which generates an acid by irradiation, and I. The **resist** compns. show high sensitivity and provide high resolution patterns with good resistance to dry etching and heat and are useful for semiconductor devices. Thus, a **resist** was prepared by using I (R = H), m-cresol-p-cresol-novolac resin, and triphenylsulfonium trifluoromethanesulfonate.

IT 153041-55-5P 153041-56-6P

(prepn. of, acid-decomposable compd., pos.-working **resist** contg.)

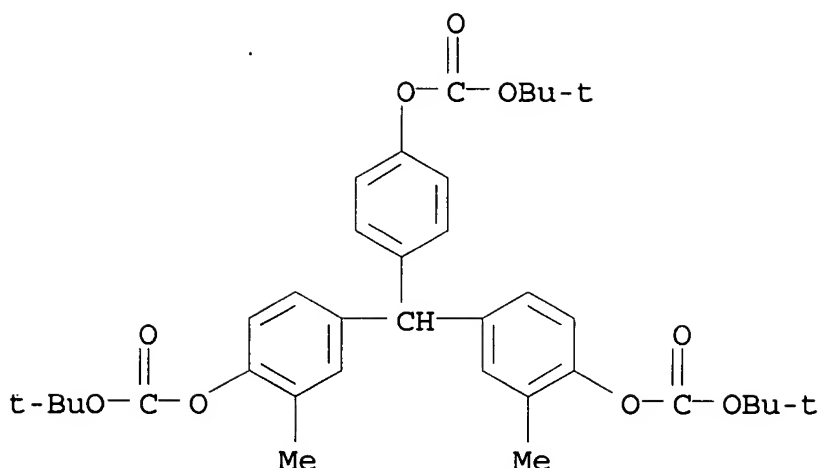
RN 153041-55-5 HCA

CN Carbonic acid, methylidynetri-4,1-phenylene tris(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 153041-56-6 HCA

CN Carbonic acid, [[4-[[[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]methylene]bis(2-methyl-4,1-phenylene) bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS C08K005-10; C08L101-00; G03F007-004; G03F007-029; H01L021-027  
ICA C07C069-96  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76  
ST trisbutoxycarbonyloxyphenylmethane acid decomposable compd; pos working radiation sensitive **resist**  
IT Phenolic resins, uses  
(novolak, pos.-working **resist** from)  
IT **Resists**  
(radiation-sensitive, pos.-working, contg.  
trisbutoxycarbonyloxyphenylmethane as acid-decomposable compd.)  
IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 66003-78-9,  
Triphenylsulfonium trifluoromethanesulfonate 119666-27-2  
(acid generator, pos.-working **resist** contg.)  
IT 25213-61-0, Monomethyl maleate-styrene copolymer 27029-76-1,  
m-Cresol-p-cresol-formaldehyde copolymer 59269-51-1,  
Poly(vinylphenol)  
(pos.-working **resist** from)  
IT 153041-55-5P 153041-56-6P  
(prepn. of, acid-decomposable compd., pos.-working **resist**  
contg.)

L70 ANSWER 64 OF 65 HCA COPYRIGHT 2007 ACS on STN  
119:282254 Positive-working **photoresist** composition. Aoai,  
Toshiaki; Kokubo, Tadayoshi (Fuji Photo Film Co., Ltd., Japan).  
Eur. Pat. Appl. EP 535653 A1 19930407, 32 pp. DESIGNATED  
STATES: R: BE, DE, FR, GB. (English). CODEN: EPXXDW.  
APPLICATION: EP 1992-116774 19920930. PRIORITY: JP 1991-253523  
19911001.

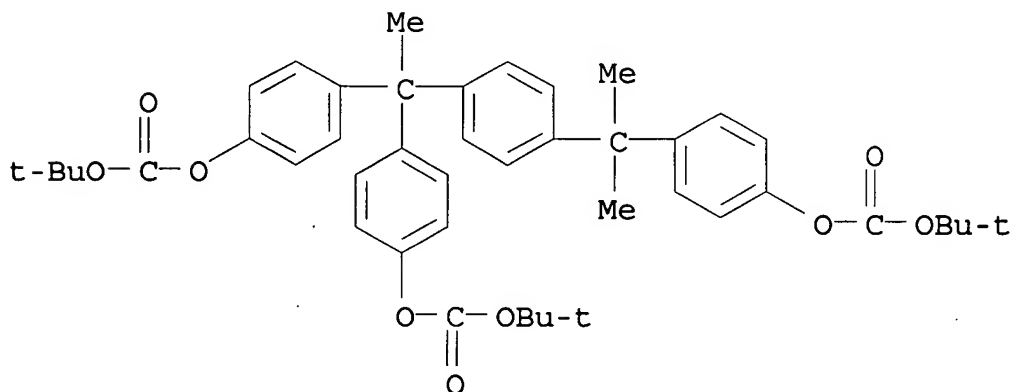
AB A pos.-working **photoresist** compn. exhibiting high sensitivity, good adaptability to short-wavelength light sources, and excellent resolu. comprises 5-99.40 wt.% of a resin sol. in an alk. soln., 0.01-20 wt.% of a disulfone compd. represented by the formula  $R_1(SO_2)_2R_2$  ( $R_1, R_2$  = substituted or unsubstituted alkyl, alkenyl, or aryl), and 0.5-80 wt.% of a compd. which has  $\geq 1$  group capable of being decompd. by an acid and whose soly. in an alk. soln. is increased by the present of an acid and the compd. has a mol. wt.  $\leq 2000$  and a b.p.  $> 150^\circ$ , wherein a 1- $\mu$ m thick film of the **photoresist** compn. has an optical d.  $\leq 1.4$  detd. at 248 nm and its value is reduced upon exposure to light of 248 nm.

IT 151533-21-0

(pos.-working **photoresist** contg. disulfones, alkali-sol. resins and)

RN 151533-21-0 HCA

CN Carbonic acid, [1-[4-[1-[4-[(1,1-dimethylethoxy)carbonyl]oxy]phenyl]-1-methylethyl]phenyl]ethylidene]di-4,1-phenylene bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **photoresist** disulfone acid decomposable compd

IT Phenolic resins, uses

(novolak, pos.-working **photoresist** contg. disulfones, acid-decomposable compds. and)

IT **Resists**

(photo-, pos.-working, contg. disulfones, alkali-sol. resins, and acid-decomposable compds.)

IT 91222-47-8 91222-48-9 91222-49-0 91222-51-4 91222-52-5  
141425-66-3

(pos.-working **photoresist** contg. alkali-sol. resins, acid-decomposable compds. and)

IT 151533-20-9 151533-21-0

(pos.-working **photoresist** contg. disulfones,  
alkali-sol. resins and)

IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer  
(pos.-working **photoresists** contg. disulfones,  
acid-decomposable compds. and)

L70 ANSWER 65 OF 65 HCA COPYRIGHT 2007 ACS on STN

117:140434 Hexafluoroacetone in **resist** chemistry: A versatile  
new concept for materials for deep UV lithography. Przybilla, K.  
J.; Roeschert, H.; Pawlowski, G. (Hoechst AG, Frankfurt/Main,  
D-6230/80, Germany). Proceedings of SPIE-The International Society  
for Optical Engineering, 1672(Adv. Resist Technol. Process. IX),  
500-12 (English) 1992. CODEN: PSISDG. ISSN: 0277-786X.

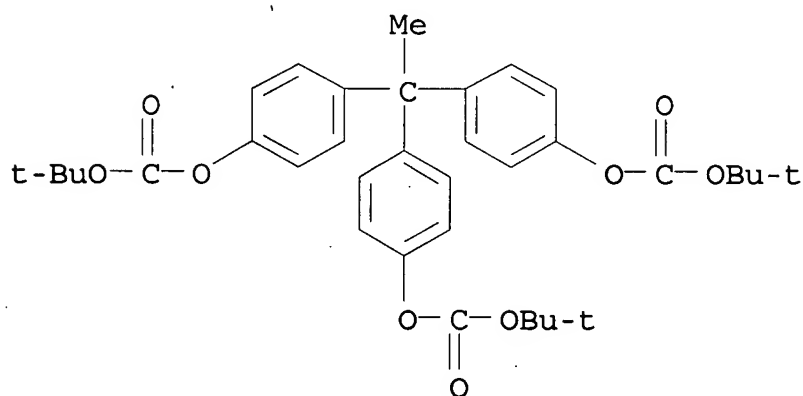
AB Starting from general arguments on hexafluoroacetone chem. an  
exploratory investigation of the utility of this new type of  
**resist** chem. is presented. The 2-hydroxyhexafluoroisopropyl-  
group (HHFIP) proves to be comparable to phenolic groups in respect  
to acidity and reactivity. Polymers contg. HHFIP-moieties are  
highly transparent alkali-sol. binder materials for functional group  
deprotection type, dissoln. inhibition type, and crosslinking type  
**photoresist** materials. Dissoln. inhibitors contg. the  
HHFIP-function show superior inhibition properties due to strong  
hydrogen bond interaction with the matrix polymer.

IT 143213-46-1

(lithog. characterization of **resist** system contg., for  
deep-UV exposure)

RN 143213-46-1 HCA

CN Carbonic acid, ethylidynetri-4,1-phenylene tris(1,1-dimethylethyl)  
ester (9CI) (CA INDEX NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

ST hexafluoroacetone chem lithog **resist** deep UV;



hydroxyhexafluoroisopropyl group styrene polymer **photoresist**  
IT **Resists**  
    (photo-, for deep-UV lithog., polymers contg.  
    hydroxyhexafluoroisopropyl-group as, hexafluoroacetone chem. for)  
IT 23358-99-8 71149-15-0 117458-06-7 139254-88-9 143213-43-8  
143213-44-9 143213-45-0 **143213-46-1** 143336-94-1  
    (lithog. characterization of **resist** system contg., for  
    deep-UV exposure)  
IT 3089-11-0  
    (**photoresist** for deep-UV exposure contg.  
    hexafluoroacetone-modified polystyrene and triphenylsulfonium  
    triflate and, characteristics of)  
IT 66003-78-9, Triphenylsulfonium triflate  
    (**photoresist** material contg. hexafluoroacetone-modified  
    polystyrene and)  
IT 9003-53-6  
    (reaction of, with hexafluoroacetone, in sepn. of lithog.  
    **photoresist** for deep-UV exposure)  
IT 684-16-2, Hexafluoroacetone  
    (reaction of, with polystyrene, in sepn. of lithog.  
    **photoresist** material for deep-UV exposure)  
IT 85947-64-4 116352-29-5  
    (sepn. of, for **photoresist** system for deep-UV lithog.)

## SEARCH REQUEST FORM

Scientific and Technical Information Center

#1

Requester's Full Name: Sim J. Lee Examiner #: 76060 Date: 4-30-07  
Art Unit: 1752 Phone Number: 302-333 Serial Number: 101531208  
Mail Box and Bldg/Room Location: 9C15 Results Format Preferred (circle): PAPER DISK E-MAIL  
(Rem.)

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See Bib

Inventor's (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search for the compound of formula (1) in cl. #1

\*\*\*\*\*  
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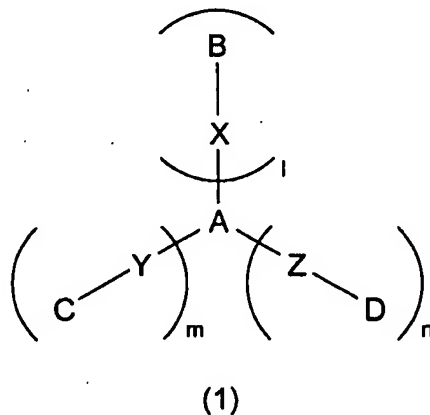
	Type of Search	Vendors and cost where applicable
Searcher: <u>EJ</u>	NA Sequence (#) _____	STN: _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>5-10-07</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

**Amendments to the Claims:**

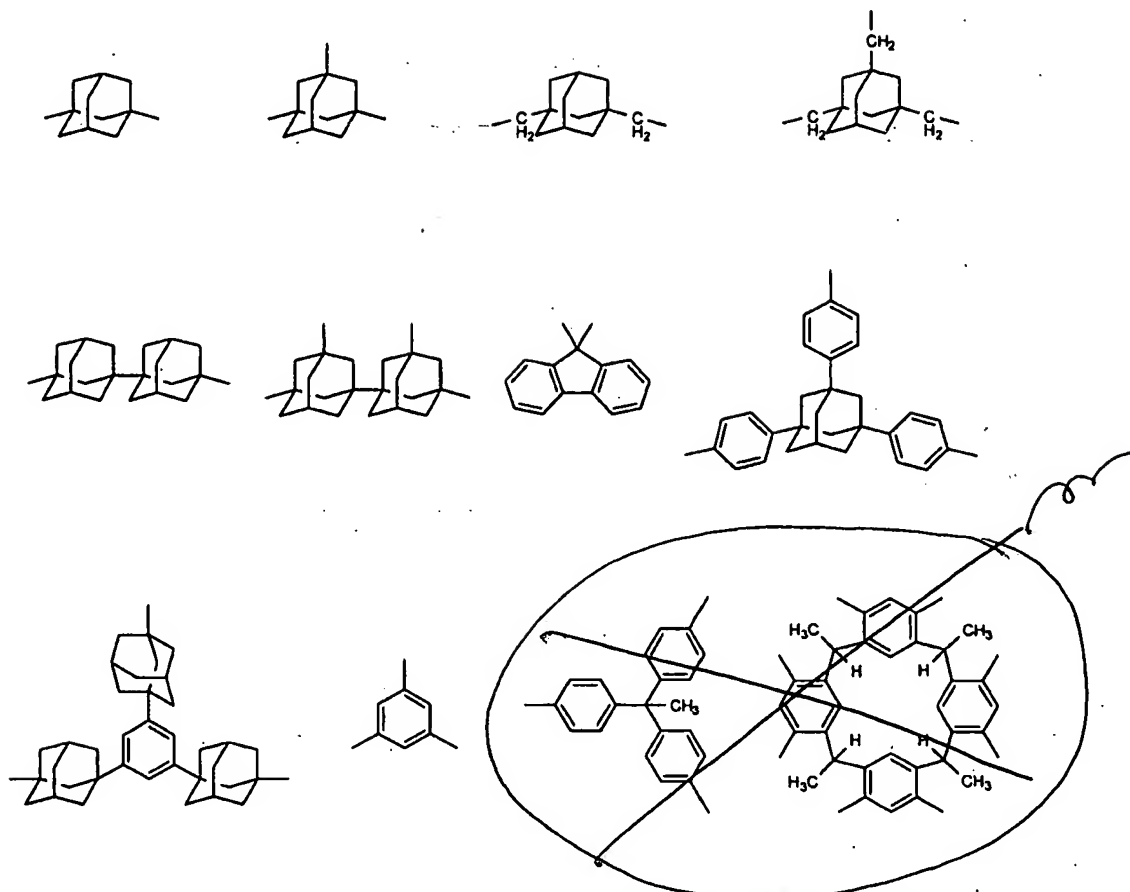
This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of claims:**

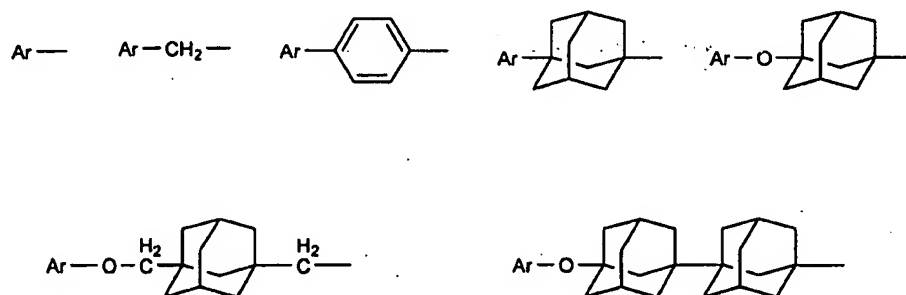
Claim 1 (original): A photoresist base material comprising an extreme ultra-violet reactive organic compound represented by the following general formula (1),



wherein A is an organic group represented by



each of B, C and D is independently an extreme ultra-violet reactive group, a group having reactivity to the action of chromophore active to extreme ultra-violet or an organic group represented by



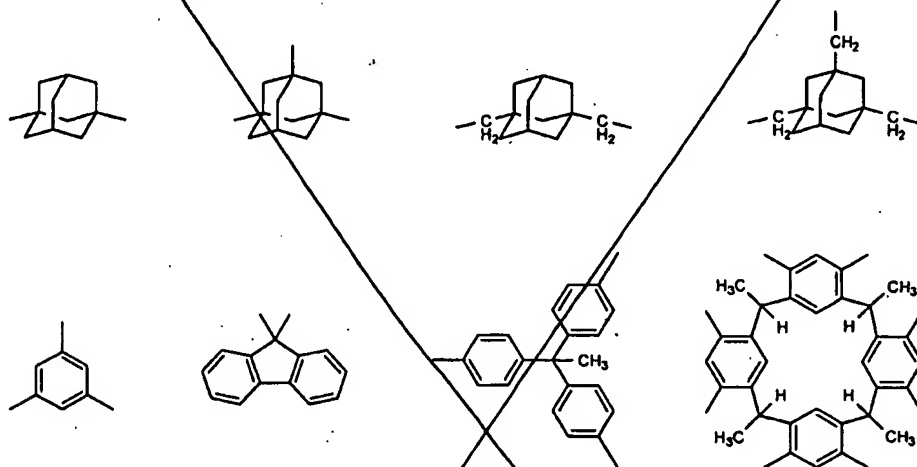
wherein Ar is a phenyl or naphthyl group substituted with RO- and/or ROCO- in which R, RO- and ROCO are extreme ultra-violet reactive groups or groups having reactivity to the action of a chromophore active to extreme ultra-violet,

each of X, Y and Z is independently a single bond or an ether bond, and

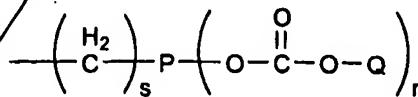
$1 + m + n = 2, 3, 4$  or 8.

Claim 2 (original): The photoresist base material as recited in claim 1, wherein said extreme ultra-violet reactive organic compound is in an amorphous state at room temperature and has a molecule whose average diameter is 2 nm or less.

Claim 3 (original): The photoresist base material as recited in claim 1, wherein A is an organic group represented by



each of B, C and D is a hydrogen atom, tert-butyl, tert-butyloxycarbonylmethyl, tert-butyloxycarbonyl, 1-tetrahydropyranyl, 1-tetrahydrofuranyl, 1-ethoxyethyl, 1-phenoxyethyl, an organic group represented by



in which P is an aromatic group having a valence of  $(r + 1)$  and having 6 to 20 carbon atoms, Q is an organic group having 4 to 30 carbon atoms,  $r$  is an integer of 1 to 10 and  $s$  is an integer of 0 to 10, or an organic group represented by



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**\*BIBDATASHEET\***

CONFIRMATION NO. 6424

Bib Data Sheet

<b>SERIAL NUMBER</b> 10/531,208	<b>FILING OR 371(c) DATE</b> 04/14/2005 <b>RULE</b>	<b>CLASS</b> 430	<b>GROUP ART UNIT</b> 1756	<b>ATTORNEY DOCKET NO.</b> 28955.1048	
<b>APPLICANTS</b> Mitsuru Ueda, Tokyo, JAPAN; Hirotoishi Ishij, Chiba, JAPAN;					
<b>** CONTINUING DATA *****</b> This application is a 371 of PCT/JP03/11137 09/01/2003					
<b>** FOREIGN APPLICATIONS *****</b> JAPAN 2002300144 10/15/2002 JAPAN 2003112458 04/17/2003					
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		<b>STATE OR COUNTRY</b> JAPAN	<b>SHEETS DRAWING</b>	<b>TOTAL CLAIMS</b> 20	<b>INDEPENDENT CLAIMS</b> 3
<b>ADDRESS</b> 27890					
<b>TITLE</b> Photoresist base material, method for purification thereof, and photoresist compositions					
<b>FILING FEE RECEIVED</b> 900	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

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FILE 'LREGISTRY' ENTERED AT 11:22:37 ON 10 MAY 2007  
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L1 1 S E5  
L2 STR 768-90-1

FILE 'REGISTRY' ENTERED AT 11:36:58 ON 10 MAY 2007  
50 S L2

L3

FILE 'LREGISTRY' ENTERED AT 11:37:28 ON 10 MAY 2007

L4 198 S 638.8.1/RID  
L5 STR  
L6 15 S L5  
L7 257 S 1839.6.36/RID

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L8 106777 S L4  
L9 108589 S L7  
L10 19885 S ((C (L) H (L) O)/ELS (L) 3/ELC.SUB) AND (L8 OR L9)

FILE 'HCAPLUS' ENTERED AT 11:41:29 ON 10 MAY 2007

L11 41681 S UEDA ?/AU  
L12 36946 S ISHII ?/AU  
L13 570 S L11 AND L12  
L14 5993 S UEDA M?/AU  
L15 4713 S ISHII H?/AU  
L16 28 S L14 AND L15  
L17 13402 S PHOTORESIST?/TI  
L18 4 S L16 AND L17  
SEL L18 1-4 RN

FILE 'REGISTRY' ENTERED AT 11:42:55 ON 10 MAY 2007

L19 27 S E1-E27  
L20 5 S L19 AND (L8 OR L9)  
L21 14827 S L10 NOT PMS/CI  
L22 27 S L2 SSS SAM SUB=L21  
L23 STR L2  
L24 SCR 1707  
L25 50 S L23 AND L24 SSS SAM SUB=L21  
L26 8407 S L23 AND L24 SSS FUL SUB=L21

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          SAV L26 LEE208/A
L27      20 S L2 SSS SAM SUB=L26
L28      STR L2
L29      SCR 1304 OR 1526
L30      16 S (L2 NOT L29) SSS SAM SUB=L26
L31      10 S (L28 NOT L29) SSS SAM SUB=L26
L32      STR L28
L33      0 S (L32 NOT L29) SSS SAM SUB=L26
L34      80 S (L32 NOT L29) SSS FUL SUB=L26
          SAV L34 LEE208A/A
L35      51 S L34/COMPLETE
L36      2 S L26 AND L19

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FILE 'HCA' ENTERED AT 12:04:51 ON 10 MAY 2007

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L37      1 S L36
L38      33 S L35
L39      51 S L34
L40      192166 S RESIST OR RESISTS OR PHOTORESIST? OR MASK? OR PHOTOMASK
L41      12 S (L37 OR L38) AND L40
L42      13 S L39 AND L40
L43      13 S L41 OR L42
L44      38 S L39 NOT L43
L45      9 S 1840-2002/PY,PRY AND L43
L46      24 S 1840-2002/PY,PRY AND L44

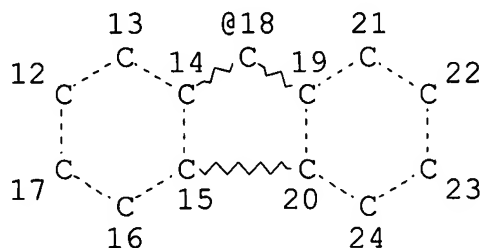
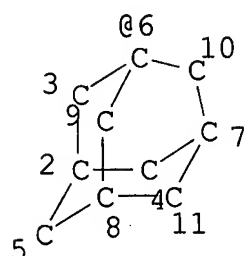
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FILE 'REGISTRY' ENTERED AT 12:07:24 ON 10 MAY 2007

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L9      108589 SEA FILE=REGISTRY 1839.6.36/RID
L10     19885 SEA FILE=REGISTRY ((C (L) H (L) O)/ELS (L) 3/ELC.SUB)
          AND (L8 OR L9)
L21     14827 SEA FILE=REGISTRY L10 NOT PMS/CI
L23     STR

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G3 69

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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

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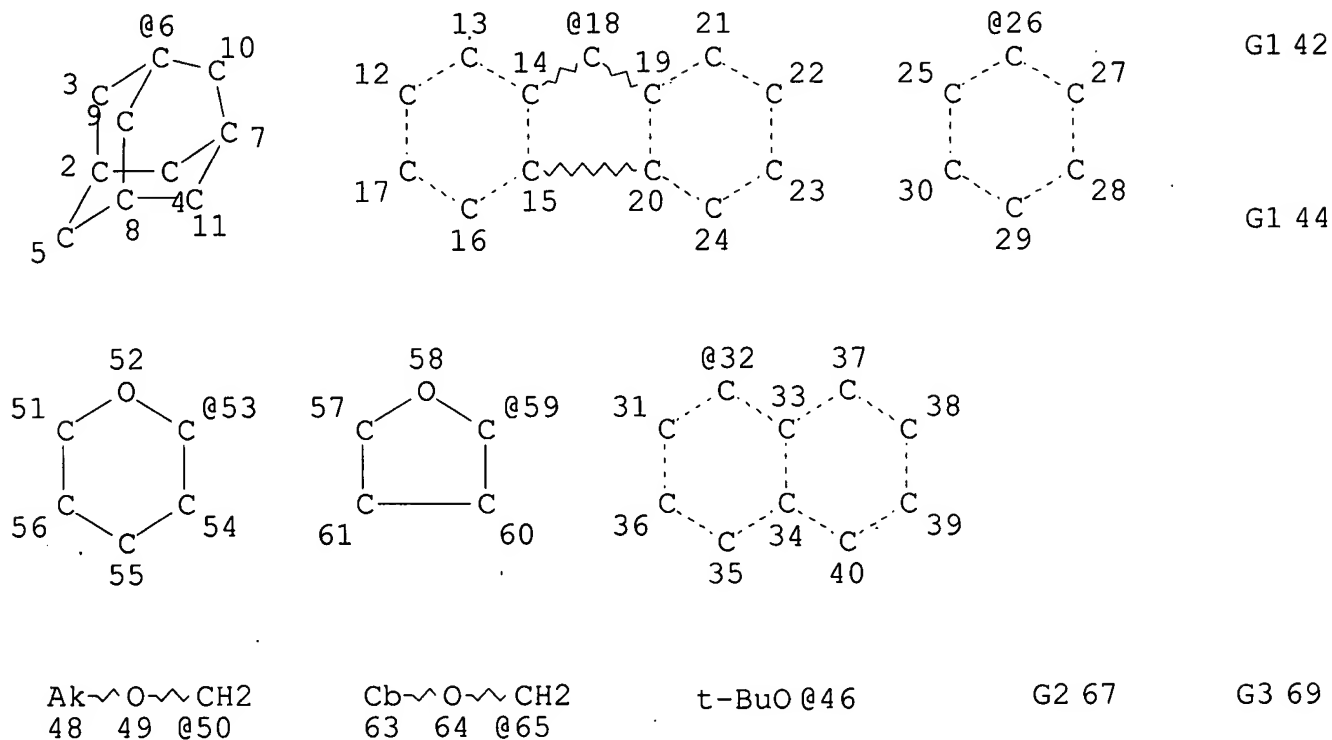
GRAPH ATTRIBUTES:

NUMBER OF NODES IS 24

L24 SCR 1707

L29 SCR 1304 OR 1526

L32 STR



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VAR G2=46/50/65/53/59
VAR G3=6/18.
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NODE ATTRIBUTES:

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CONNECT	IS	E2	RC	AT	16
CONNECT	IS	E2	RC	AT	17
CONNECT	IS	M4	RC	AT	18
CONNECT	IS	E2	RC	AT	21
CONNECT	IS	E2	RC	AT	22
CONNECT	IS	E2	RC	AT	23

CONNECT IS E2 RC AT 24  
CONNECT IS E1 RC AT 48  
DEFAULT MLEVEL IS ATOM  
GGCAT IS LIN SAT AT 48  
GGCAT IS UNS AT 63  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RSPEC I  
NUMBER OF NODES IS 61

STEREO ATTRIBUTES: NONE  
L34 80 SEA FILE=REGISTRY SUB=L26 SSS FUL (L32 NOT L29)

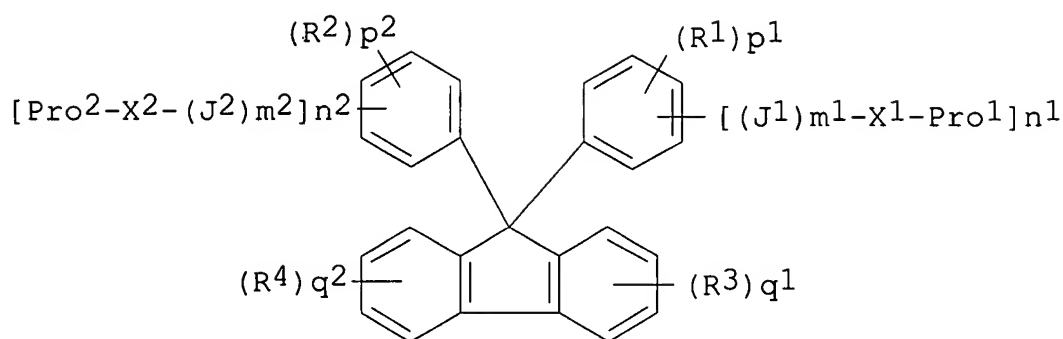
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SEARCH TIME: 00.00.08

=> FILE HCA  
FILE 'HCA' ENTERED AT 12:07:40 ON 10 MAY 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

=> D L45 1-9 CBIB ABS HITSTR HITIND

L45 ANSWER 1 OF 9 HCA COPYRIGHT 2007 ACS on STN  
140:397371 Fluorenes as additives for photosensitive resin compositions  
for **resists**. Murase, Hiroaki; Yamada, Mitsuaki; Suda,  
Yasuhiro; Ogata, Kazuyuki; Hanahata, Makoto; Sato, Masahiro (Osaka  
Gas Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004137262 A  
20040513, 36 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2003-328520 20030919. PRIORITY: JP 2002-284298 20020927.

GI



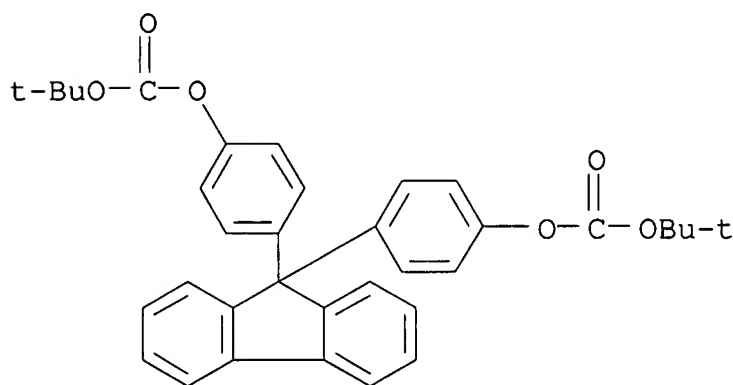
AB The fluorenes are I ( $J_1$ ,  $J_2$  = linkage;  $X_1\text{Pro}$ ,  $X_2\text{Pro}$  = hydrophilic groups bearing leaving protective groups;  $R_1$ - $R_4$  = alkyl, alkenyl, alkoxy, etc.;  $m_1$ ,  $m_2$  = 0, 1;  $n_1$ ,  $n_2$ ,  $p_1$ ,  $p_2$ ,  $q_1$ ,  $q_2$  = 0-4;  $n_1$  and/or  $n_2$  = 1-4;  $n_1 + p_1 \leq 5$ ;  $n_2 + p_2 \leq 5$ ). The fluorenes show high sensitivity to short-wavelength light, e.g., KrF excimer laser, and increase soly. difference between exposed and unexposed parts, achieving **resists** producing high-resoln. patterns.

IT **469858-95-5P 469859-65-2P 469859-71-0P**  
**685867-41-8P**

(fluorenes as additives for excimer laser-sensitive pos.  
**photoresists** producing high-resoln. patterns)

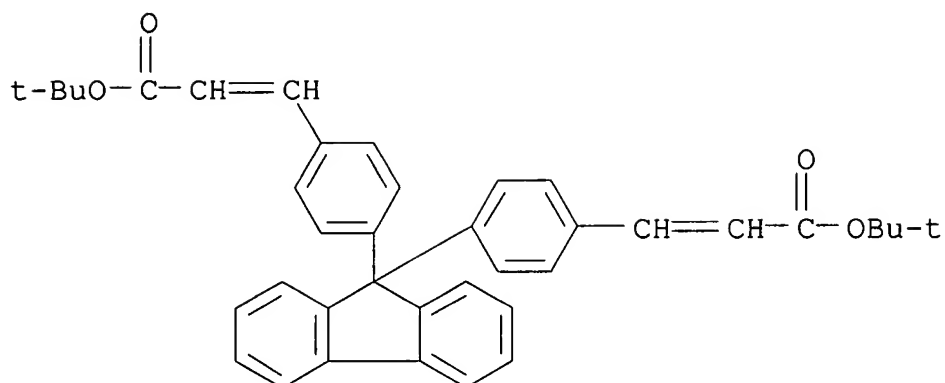
RN 469858-95-5 HCA

CN Carbonic acid, 9H-fluoren-9-ylidenedi-4,1-phenylene  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



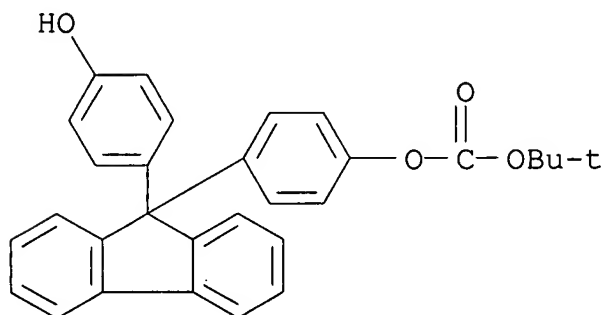
RN 469859-65-2 HCA

CN 2-Propenoic acid, 3,3'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis-,  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



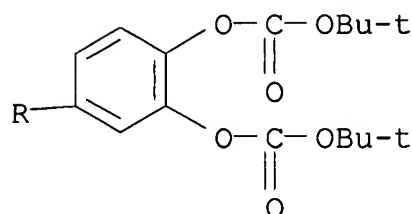
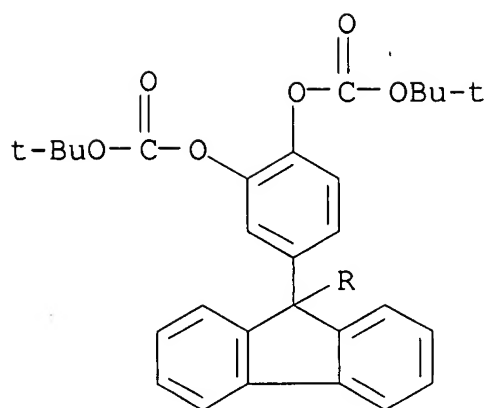
RN 469859-71-0 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-[9-(4-hydroxyphenyl)-9H-fluoren-9-yl]phenyl ester (9CI) (CA INDEX NAME)



RN 685867-41-8 HCA

CN Carbonic acid, 9H-fluoren-9-ylidenedi-4,1,2-benzenetriyl tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



- IC ICM C07C043-21  
ICS C07C069-96; C07C309-65; C09B011-00; G03F007-004; G03F007-039
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 25, 38
- ST fluorene additive pos **photoresist** excimer laser;  
ethoxyethoxyphenylfluorene polyvinylphenol pos excimer laser  
**photoresist**
- IT **Photoresists**  
(UV, vacuum-UV; fluorenes as additives for excimer laser-sensitive pos. **photoresists** producing high-resoln. patterns)
- IT Positive **photoresists**  
(fluorenes as additives for excimer laser-sensitive pos. **photoresists** producing high-resoln. patterns)
- IT **469858-95-5P** 469859-35-6P **469859-65-2P**  
**469859-71-0P** 685867-40-7P **685867-41-8P**  
(fluorenes as additives for excimer laser-sensitive pos. **photoresists** producing high-resoln. patterns)
- IT 218769-04-1P 351521-78-3P  
(fluorenes as additives for excimer laser-sensitive pos. **photoresists** producing high-resoln. patterns)
- IT 109-92-2, Ethyl vinyl ether 120-80-9, Catechol, reactions  
358-23-6, Trifluoromethanesulfonic acid anhydride 486-25-9,

9-Fluorenone 1663-39-4, tert-Butyl acrylate 3236-71-3,  
9,9-Bis(4-hydroxyphenyl)fluorene 24424-99-5, Di-tert-butyl  
dicarbonate 88938-12-9

(fluorenes as additives for excimer laser-sensitive pos.

**photoresists** producing high-resoln. patterns)

IT 59269-51-1D, Vinylphenol homopolymer, 1-ethoxyethyl ether  
155214-68-9, Vinylphenol homopolymer tert-butoxycarboxylate  
(fluorenes as additives for excimer laser-sensitive pos.

**photoresists** producing high-resoln. patterns)

L45 ANSWER 2 OF 9 HCA COPYRIGHT 2007 ACS on STN

140:383102 **Photoresist** base material, method for purification  
thereof, and **photoresist** compositions containing the same.  
Ueda, Mitsuru; Ishii, Hirotoishi (Idemitsu Kosan Co., Ltd., Japan).  
PCT Int. Appl. WO 2004036315 A1 20040429, 56 pp. DESIGNATED STATES:  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM,  
HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,  
LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,  
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,  
US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI,  
CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE,  
NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 2003-JP11137 20030901. PRIORITY: JP 2002-300144  
20021015; JP 2003-112458 20030417.

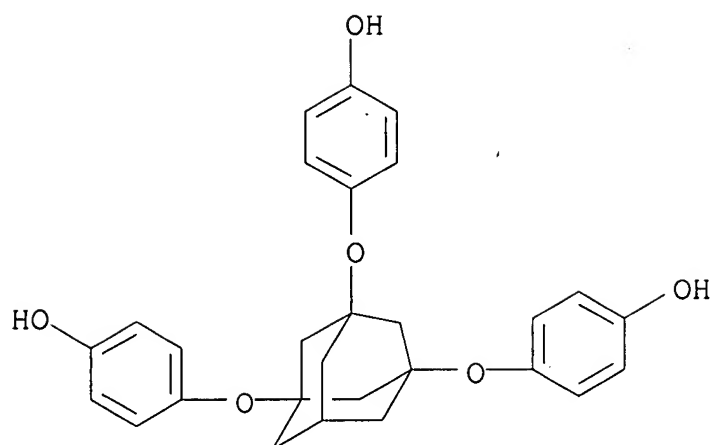
AB The invention relates to **photoresist** base materials  
consisting of extreme UV sensitive-org. compds. represented by the  
general formula (B-X)l(C-Y)m(D-Z)nA: [wherein A is a central  
structure consisting of an aliph. group having C1-50, an arom. group  
having C6-50 carbon, an org. group bearing both, or an org. group  
having a cyclic structure formed by repetition of these groups; B to  
D are each an extreme UV sensitive group, a group exhibiting a  
reactivity on the action of a chromophore sensitive to extreme UV  
rays, a C1-50 aliph. or C6-50 arom. group having such a group, an  
org. group having both groups, or a substituent having a branched  
structure; X to Z are each a single bond or an ether linkage; l to n  
are integers of 0-5 satisfying the relationship:  $l + m + n \geq 1$ ;  
and A to D may each have a heteroatom-bearing substituent]. The  
invention provides **photoresist** base materials and  
**photoresist** compns. which enable ultrafine lithog. with  
extreme UV rays or the like and is suitable for use in semiconductor  
device fabrication.

IT 683227-72-7P 683227-73-8P

(**photoresist** base material, method for purifn. thereof,  
and **photoresist** compns. contg. the same)

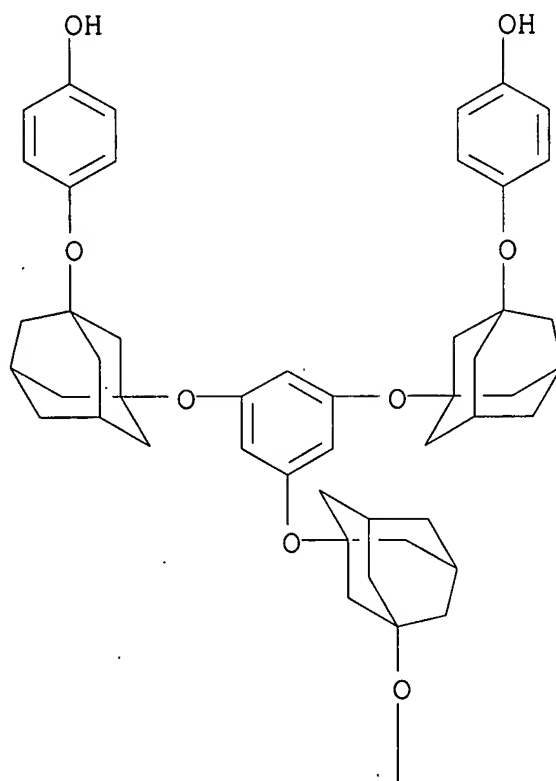
RN 683227-72-7 HCA

CN Phenol, 4,4',4''-[tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5-  
triyltris(oxy)]tris- (9CI) (CA INDEX NAME)

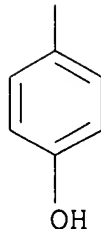


RN 683227-73-8 HCA  
CN Phenol, 4,4',4''-[1,3,5-benzenetriyltris(oxytricyclo[3.3.1.13,7]decane-3,1-diyloxy)]tris- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



- IC ICM G03F007-039  
ICS C07C039-17; C07C069-736; C07D309-04
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- ST **photoresist** compn
- IT Light-sensitive materials  
**Photoresists**  
Recrystallization  
Semiconductor device fabrication  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT Distillation  
(vacuum; **photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT 65338-98-9DP, tetrahydropyranyl and benzyl deriv. ethers  
125748-07-4P, Calix[4]resorcinarene 211427-64-4P  
**683227-72-7P 683227-73-8P 683227-74-9P**  
683227-75-0P 683227-76-1P  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT 75-07-0, Acetaldehyde, reactions 108-46-3, Resorcinol, reactions  
110-87-2, Dihydro-2H-pyran 623-05-2, 4-Hydroxybenzyl alcohol  
1927-95-3, 4-Bromophenyl acetate 5001-18-3, 1,3-Dihydroxyadamantane 5292-43-3, tert-Butyl bromoacetate  
24424-99-5, Di-tert-butyl dicarbonate 27955-94-8 29654-55-5, 3,5-Dihydroxybenzylalcohol 99181-50-7, 1,3,5-Trihydroxyadamantane  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- IT 156281-11-7P, 4-(tert-Butoxycarbonyloxy)benzylalcohol  
(**photoresist** base material, method for purifn. thereof, and **photoresist** compns. contg. the same)
- L45 ANSWER 3 OF 9 HCA COPYRIGHT 2007 ACS on STN  
139:60427 Photopolymerizable carboxyl-terminated bisphenol fluorene epoxy (meth)acrylate-based unsaturated resins, their preparation,



and their compositions. Fujii, Satoru; Yanagihara, Yoshihisa; Kitano, Kei (Nagase Chemtex Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2003176343 A 20030624, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-377510 20011211.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The resins have  $M_n \geq 1500$  and are represented by general formula  $HO_2YCO_2[X_1O_2CZ(CO_2H)_2CO_2]_l[X_2O_2CZ(CO_2H)_2CO_2]_mXO_2CYCO_2H$  where  $X_1$  and  $X_2$  are derived from 9,9-bis[[4-[3'-(meth)acryloyloxy-2'-hydroxypropyloxy]-3-R]phenyl]fluorene [I, II; in I,  $R = R_1$ , in II,  $R = R_3$ ;  $R_1, R_3 = H, C_1-5$  alkyl, Ph halo;  $R_1 \neq R_3$ ],  $X = X_1$  or  $X_2$ ,  $l/m = 1/99-99/1$ ,  $l + m = 1-20$  integer, and  $Z, Y =$  residue removing acid anhydride groups from dicarboxylic acid anhydrides (III) and tetracarboxylic acid dianhydrides (IV); I and I are reacted with III, then with IV; molar ratio of III:IV = 1:99-65:35. The comps. contain (A) the resins, (B) epoxides, (C) photopolymer. initiators, and optionally (D)  $\geq 1$  photopolymerizable monomers and/or oligomers  $\leq 50$  parts per 100 parts A. The comps. give films having good heat resistance, transparency, adhesion strength, chem. resistances, etc., and are useful for protection films or interlayer dielects. of color filters, LCD, IC, solid image pickup devices, color **resist** binders, solder **resists**, etc.

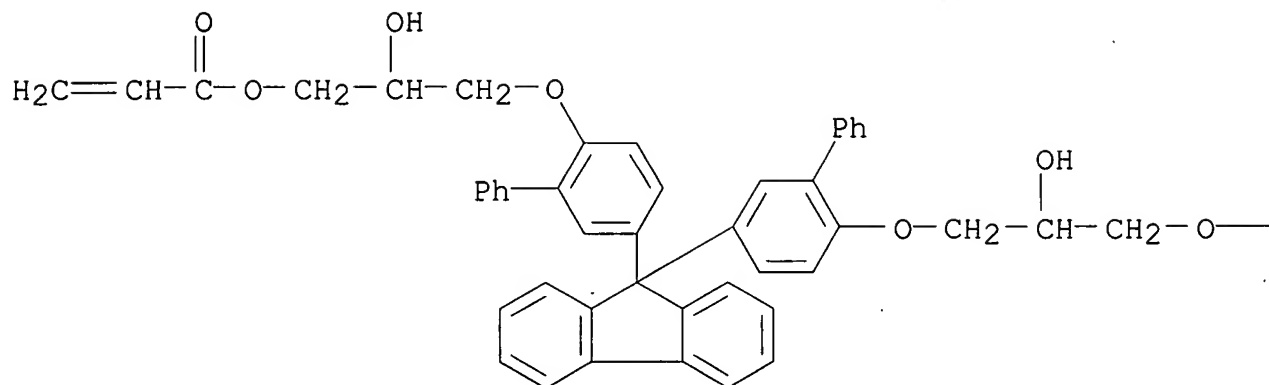
IT **405316-31-6P**

(prepn. of photopolymerizable  $HO_2C$ -terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their comps. for **resists** and color filters)

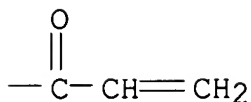
RN 405316-31-6 HCA

CN 2-Propenoic acid, 9H-fluorene-9-ylidenebis[[1,1'-biphenyl]-5,2-diyl]oxy(2-hydroxy-3,1-propanediyl)] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



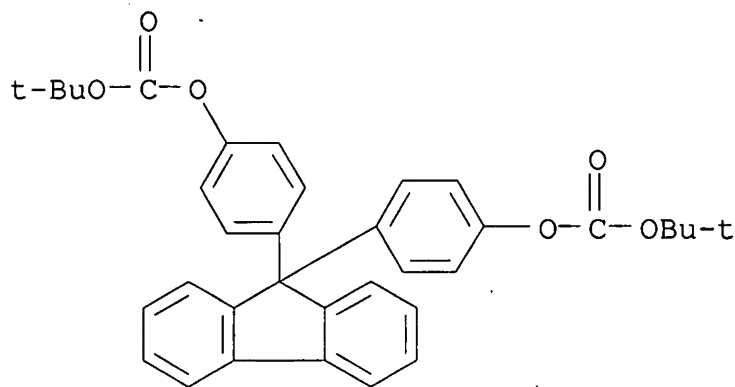
- IC ICM C08G063-676  
ICS C07C069-54; C08F290-06; C08G059-42; G03F007-004; G03F007-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- ST carboxy terminated bisphenol fluorene epoxy acrylate polymer; glycidylxyphenyl fluorene acrylate polymer photopolymerizable compn; neg **photoresist** bishydroxyphenylfluorene dicarboxylic acid polymer
- IT Negative **photoresists**  
(UV; prepn. of photopolymerizable HO<sub>2</sub>C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT Polyesters, preparation  
(acrylates, carboxyl group-contg.; prepn. of photopolymerizable HO<sub>2</sub>C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT Epoxy resins, uses  
(compns. contg.; prepn. of photopolymerizable HO<sub>2</sub>C-terminated

- bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT 29570-58-9, Dipentaerythritol hexaacrylate 66055-62-7, Epikote YX 4000  
(compns. contg.; prepn. of photopolymerizable HO<sub>2</sub>C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT 143182-97-2P **405316-31-6P** 538316-06-2P  
(prepn. of photopolymerizable HO<sub>2</sub>C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- IT 546084-33-7P, Benzophenonetetracarboxylic dianhydride-9,9-bis[4-(3'-acryloyloxy-2'-hydroxypropyloxy)phenyl]fluorene-9,9-bis[[4-(3'-acryloyloxy-2'-hydroxypropyloxy)-3-phenyl]phenyl]fluorene copolymer, half ester with 1,2,3,6-tetrahydrophthalic anhydride 546084-36-0P, Benzophenonetetracarboxylic dianhydride-9,9-bis[4-(3'-acryloyloxy-2'-hydroxypropyloxy)phenyl]fluorene-9,9-bis[[4-(3'-acryloyloxy-2'-hydroxypropyloxy)-3-methyl]phenyl]fluorene copolymer, half ester with 1,2,3,6-tetrahydrophthalic anhydride  
(prepn. of photopolymerizable HO<sub>2</sub>C-terminated bisphenol fluorene epoxy (meth)acrylate-based unsatd. polyesters and their compns. for **resists** and color filters)
- L45 ANSWER 4 OF 9 HCA COPYRIGHT 2007 ACS on STN
- 137:302225 Optically active compound and photosensitive resin composition.. Hanabata, Makoto; Sato, Masahiro; Katayama, Junko; Kitajima, Satsuki; Niwa, Atsushi (Kansai Research Institute Inc., Japan). PCT Int. Appl. WO 2002079131 A1 **20021010**, 166 pp.  
DESIGNATED STATES: W: CA, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP3140 20020329. PRIORITY: JP 2001-97019 20010329; JP 2001-97020 20010329.
- AB The disclosed optically active compds. are represented by the following formula (1) and is used in combination with a photosensitizer: A-[(J)m-(X-Pro)]n (1) wherein A represents a hydrophobic unit comprising at least one hydrophobic group selected among hydrocarbon groups and heterocyclic groups; J represents a connecting group; X-Pro represents a hydrophilic group protected by a protective group Pro eliminable with light irradiation; m is 0 or 1; and n is an integer of 1 or larger. The protective group Pro may be eliminable upon light irradiation by the action of the photosensitizer (esp. an acid generator), or may be a hydrophobic protective group. The hydrophilic group may be hydroxyl, carboxyl, etc. The optically active compd. is highly sensitive even to short-wavelength lights and is useful in the field of **resists** for forming a pattern with high resolution.
- IT **469858-95-5P 469859-65-2P 469859-71-0P**  
(synthesis and use as photosensitive compd. for photoacid

generator type **photoresist** compns.)

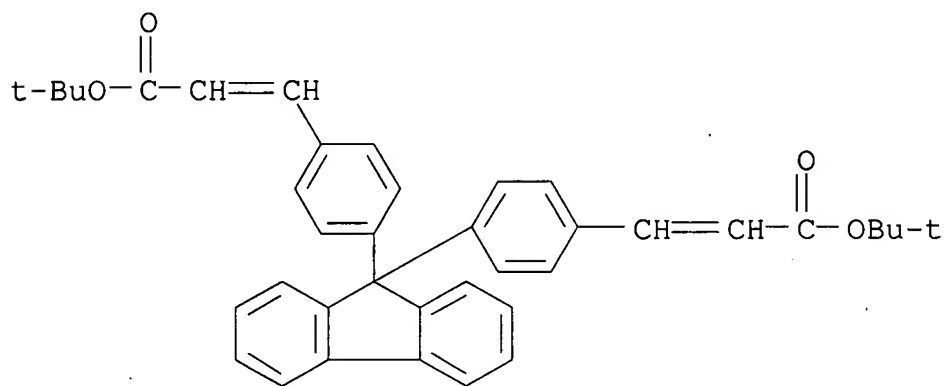
RN 469858-95-5 HCA

CN Carbonic acid, 9H-fluoren-9-ylidenedi-4,1-phenylene  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



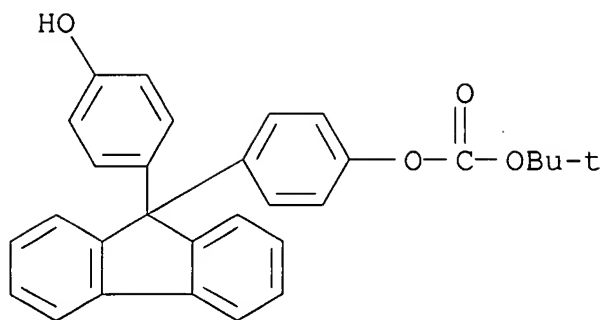
RN 469859-65-2 HCA

CN 2-Propenoic acid, 3,3'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis-,  
bis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



RN 469859-71-0 HCA

CN Carbonic acid, 1,1-dimethylethyl 4-[9-(4-hydroxyphenyl)-9H-fluoren-9-yl]phenyl ester (9CI) (CA INDEX NAME)



- IC ICM C07C043-205  
 ICS C07C069-96; C07C043-225; C07C069-92; C07C069-773; C07C043-215;  
 C07C069-618; C07C069-65; C07C069-734; C07C069-82; C07C069-76;  
 C07C069-94; C07C235-56; C07C271-58; C07C317-22; C07F007-08;  
 G03F007-004; C08K005-00; C08L101-00; H01L021-30
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 25
- ST photosensitive compd photoacid generation **photoresist**
- IT Positive **photoresists**  
 (photosensitive compds. for photoacid generator type)
- IT 233756-76-8  
 (intermediate in synthesis of photosensitive compd for  
**photoresists**)
- IT 1486-51-7P 1927-95-3P 2234-45-9P 2776-58-1P 3166-97-0P  
 3233-32-7P, 4-Hydroxyphenyl acetate 5438-19-7P 6311-66-6P  
 6793-92-6P 18979-50-5P 25813-95-0P 32122-11-5P 39604-97-2P  
 39969-56-7P 50670-76-3P 50687-68-8P 59748-13-9P 59748-38-8P  
 61760-85-8P 63619-51-2P 65195-14-4P 65355-29-5P 70568-46-6P  
 81005-00-7P 81631-63-2P 82657-70-3P 83558-77-4P 88038-94-2P  
 90925-43-2P 97476-14-7P 107394-89-8P 113248-02-5P  
 115478-59-6P 124388-30-3P 127972-28-5P 131610-59-8P  
 148731-02-6P 148731-12-8P 152873-82-0P 218769-04-1P  
 252983-81-6P 258513-95-0P 436848-04-3P 469859-73-2P  
 469859-74-3P 469859-75-4P 469859-76-5P 469859-77-6P  
 469859-78-7P 469859-79-8P 469859-80-1P 469859-81-2P  
 469859-82-3P 469859-83-4P 469859-84-5P 469859-85-6P  
 469859-86-7P 469859-87-8P 469859-88-9P 469859-89-0P  
 469859-90-3P 469859-91-4P 469859-92-5P  
 (intermediate in synthesis of photosensitive compd for  
**photoresists**)
- IT 59269-51-1D, Polyvinylphenol, butoxycarbonyloxy substituted  
 59269-51-1D, Polyvinylphenol, ethoxyethyl ethers 66003-78-9  
 (intermediate in synthesis of photosensitive compd for  
**photoresists**)
- IT 75-36-5, Acetyl chloride 75-65-0, tert-Butanol, reactions

80-05-7, Bisphenol A, reactions 83-56-7, 1,5-Dihydroxynaphthalene  
 90-15-3, 1-Naphthol 92-69-3, 4-Phenylphenol 92-86-4,  
 4,4'-Dibromobiphenyl 92-88-6, 4,4'-Biphenol 94-18-8, Benzyl  
 4-hydroxybenzoate 98-54-4, 4-tert-Butylphenol 99-76-3, Methyl  
 4-hydroxybenzoate 100-20-9, Terephthaloyl dichloride 100-44-7,  
 Benzyl chloride, reactions 103-16-2, 4-Benzyloxyphenol 104-81-4  
 106-37-6, p-Dibromobenzene 106-41-2, 4-Bromophenol 106-94-5,  
 1-Bromopropane 108-73-6, 1,3,5-Trihydroxybenzene 109-92-2, Ethyl  
 vinyl ether 110-53-2, n-Pentyl bromide 123-31-9, Hydroquinone,  
 reactions 135-19-3, 2-Naphthol, reactions 327-51-5,  
 1,4-Dibromo-2,5-difluorobenzene 358-23-6, Trifluoromethanesulfonic  
 acid anhydride 536-74-3 581-43-1, 2,6-Dihydroxynaphthalene  
 588-93-2, 1-Bromo-4-propylbenzene 589-15-1 623-05-2,  
 4-Hydroxybenzyl alcohol 626-39-1, 1,3,5-Tribromobenzene  
 627-19-0, 1-Pentyne 645-56-7, 4-Propylphenol 771-63-1,  
 2,3,5,6-Tetrafluorohydroquinone 1066-54-2 1478-61-1,  
 2,2-Bis(4-hydroxyphenyl)hexafluoropropane 1663-39-4 2438-05-3,  
 4-Propylbenzoic acid 3236-71-3 4422-95-1, 1,3,5-  
 Benzenetricarbonyl trichloride 13595-25-0 15231-91-1,  
 6-Bromo-2-naphthol 17696-62-7, Phenyl 4-hydroxybenzoate  
 23138-50-3 25641-61-6, Bis(hydroxyphenyl) sulfone 29558-77-8,  
 4-Bromo-4'-hydroxybiphenyl 33228-44-3, 4-Pentylaniline  
 34619-03-9, Di-tert-butyl carbonate 38289-27-9 51554-95-1  
 54589-51-4 62452-73-7 81936-33-6 82575-69-7 86579-53-5  
 469859-72-1

(reactant in synthesis of photosensitive compd for  
**photoresists**)

IT 99-89-8, 4-Isopropylphenol

(reaction with Et vinyl ether in synthesis of photosensitive  
 compd for **photoresists**)

IT	1706-74-7P	28313-42-0P	69225-39-4P	90875-14-2P	115052-69-2P
	115311-03-0P	117458-06-7P	127175-62-6P	127806-99-9P	
	129104-70-7P	139254-88-9P	139290-12-3P	142524-71-8P	
	145531-14-2P	147833-74-7P	160649-31-0P	166597-59-7P	
	166597-61-1P	171418-02-3P	195057-82-0P	202654-70-4P	
	210410-26-7P	210410-28-9P	436848-03-2P	447464-29-1P	
	447464-33-7P	454692-73-0P	469858-90-0P	469858-91-1P	
	469858-92-2P	469858-93-3P	469858-94-4P	<b>469858-95-5P</b>	
	469858-96-6P	469858-97-7P	469858-98-8P	469858-99-9P	
	469859-00-5P	469859-01-6P	469859-02-7P	469859-03-8P	
	469859-04-9P	469859-05-0P	469859-06-1P	469859-07-2P	
	469859-08-3P	469859-09-4P	469859-10-7P	469859-11-8P	
	469859-12-9P	469859-13-0P	469859-14-1P	469859-15-2P	
	469859-17-4P	469859-18-5P	469859-19-6P	469859-20-9P	
	469859-21-0P	469859-22-1P	469859-23-2P	469859-24-3P	
	469859-25-4P	469859-26-5P	469859-27-6P	469859-28-7P	
	469859-29-8P	469859-30-1P	469859-31-2P	469859-32-3P	
	469859-33-4P	469859-34-5P	469859-35-6P	469859-36-7P	

469859-37-8P	469859-38-9P	469859-39-0P	469859-40-3P
469859-41-4P	469859-42-5P	469859-43-6P	469859-44-7P
469859-45-8P	469859-46-9P	469859-47-0P	469859-48-1P
469859-49-2P	469859-50-5P	469859-51-6P	469859-52-7P
469859-53-8P	469859-54-9P	469859-55-0P	469859-56-1P
469859-57-2P	469859-58-3P	469859-59-4P	469859-60-7P
469859-61-8P	469859-62-9P	469859-63-0P	469859-64-1P
<b>469859-65-2P</b>	469859-66-3P	469859-67-4P	469859-68-5P
469859-69-6P	469859-70-9P	<b>469859-71-0P</b>	

(synthesis and use as photosensitive compd. for photoacid generator type **photoresist** compns.)

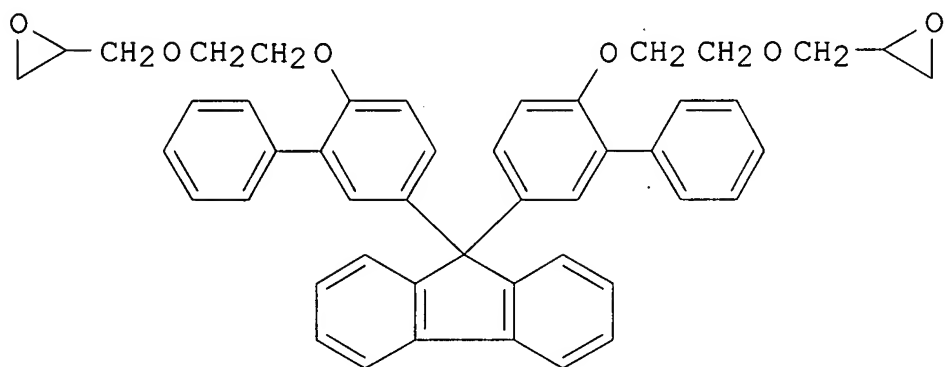
IT 436848-01-0P 469859-16-3P

(synthesis and use as photosensitive compd. for photoacid generator type **photoresist** compns. synthesis and use as photosensitive compd. for photoacid generator type **photoresist** compns.)

L45 ANSWER 5 OF 9 HCA COPYRIGHT 2007 ACS on STN

137:178025 Modified epoxy resin compositions for solder **resists** or interlayer insulators of printed circuits. Koyanagi, Takao; Ozaki, Toru; Yokojima, Minoru (Nippon Kayaku Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002226529 A **20020814**, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-20957 20010130.

GI



AB The compns. comprise diluents and ethylenically unsatd. group-contg. resins prepd, by (1) reacting epoxy resins I with ethylenically unsatd. group- and CO<sub>2</sub>H-contg. compds. and optionally satd. monocarboxylic acids and optionally (2) reacting the resulting epoxy (meth)acrylates with polybasic acid anhydrides. The compns. may contain photopolymn. initiators and/or heat-curable components. Cured products of the compns. and materials (e.g., printed circuits) having the cured product layers are also claimed. The cured

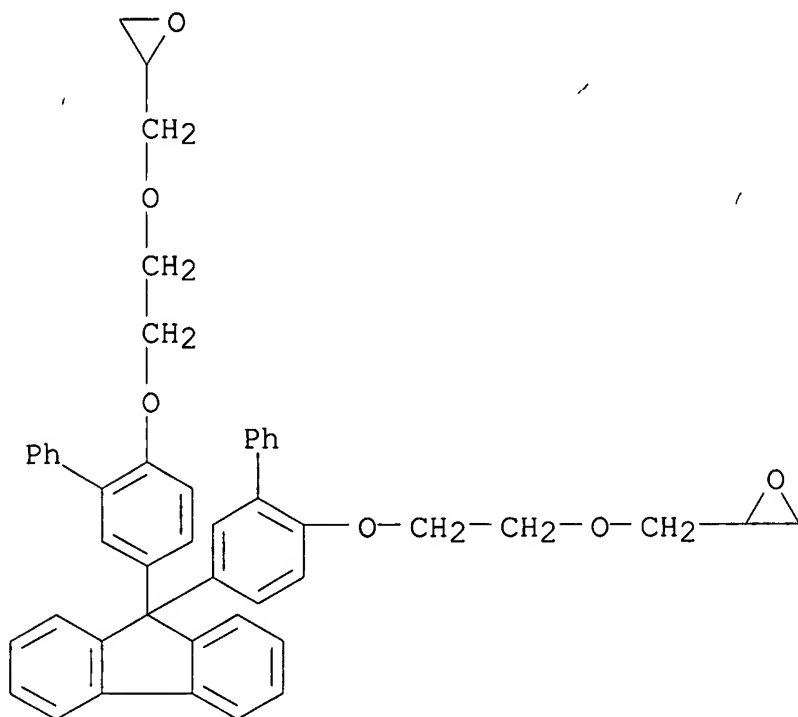
products show good solder heat resistance, electroless coatability, and elec. insulation and the compns. can be developed with org. solvents or dil. alk. solns.

IT **445498-39-5P**

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

RN 445498-39-5 HCA

CN Oxirane, 2,2'-[9H-fluoren-9-ylidenebis([1,1'-biphenyl]-5,2-diyoxy-2,1-ethanedioxymethylene)]bis- (9CI) (CA INDEX NAME)



IC ICM C08F290-06

ICS C08F002-50; C08F299-02; C08G059-16; G03F007-004; G03F007-027; G03F007-028; H05K003-28; H05K003-46

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 38, 74

ST epoxy resin acrylate solder **resist** interlayer insulator;  
printed circuit solder **resist** interlayer insulator

IT Epoxy resins, uses

(acrylates; modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT Electric insulators

Printed circuits

Solder **resists**

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)



IT 445498-39-5P

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT 446036-42-6P 446036-43-7P

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

IT 108-78-1, Melamine, uses 77641-99-7, Kayarad DPHA 87320-05-6, Kayarad R 604 225919-17-5, NC 3000P

(modified epoxy resin compns. for solder **resists** or interlayer insulators of printed circuits)

L45 ANSWER 6 OF 9 HCA COPYRIGHT 2007 ACS on STN

136:280161 Photocurable unsaturated resins useful for alkali-developable **photoresists** and their use in the manufacture of color filters. Fujii, Satoru; Yanagihara, Yoshinao; Kitano, Kei (Nagase Kasei Kogyo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2002088136 A **20020327**, 18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-277236 20000912.

AB The resins are of  $\text{HOOCYCO}_2[\text{XOCOZ}(\text{COOH})_2\text{CO}_2]_n\text{XOCOYCOOH}$  type [X =  $\text{CH}_2:\text{CHC}(\text{O})\text{OCH}_2\text{CHCH}_2\text{O}[\text{AOCH}_2\text{CH}(\text{OH})\text{CH}_2\text{O}]_a\text{AOCH}_2\text{CHCH}_2\text{OC}(\text{O})\text{CH}:\text{CH}_2$  where A = linking unit derived from 9,9-bis(4-hydroxy-3-phenyl)fluorene (I) via hydroxy groups; Y = unit derived from acid anhydride; Z = unit derived from acid dianhydride; a = 0-20] and can be prepd. by the reaction of a I compd.-based epoxy resin with acrylic acid then modifying with acid anhydride compds. Thus, heating a mixt. of 9,9-bis(4-hydroxy-3-phenyl)fluorene diglycidyl ether 312, triethylbenzylammonium chloride 0.450, 2,6-diisobutylphenol 0.100, acrylic acid 72.0 and propylene glycol monomethyl acetate 500 g at 90-100° while flushing with air then increasing the temp. to 120° gave an acrylated product 584 g of which was combined with propylene glycol monomethyl acetate 80.5, benzophenonetetracarboxylic anhydride 80.5 and tetraethylammonium bromide 1 g, heated to 110-115°, maintained at this temp. for 4 h, combined with 1,2,3,6-tetrahydrophthalic anhydride 39.0 and heated at 90° for 6 h to give a target resin. Mixing the resin 20.0 with dipentaerythritol hexaacrylate 8.6, tetramethylbiphenyl epoxy resin 4.4, Michler's ketone 0.2, Irgacure 907 (photoinitiator) 1.2, and propylene glycol monomethyl acetate 65.6 parts gave a photocurable compn. for forming color filter.

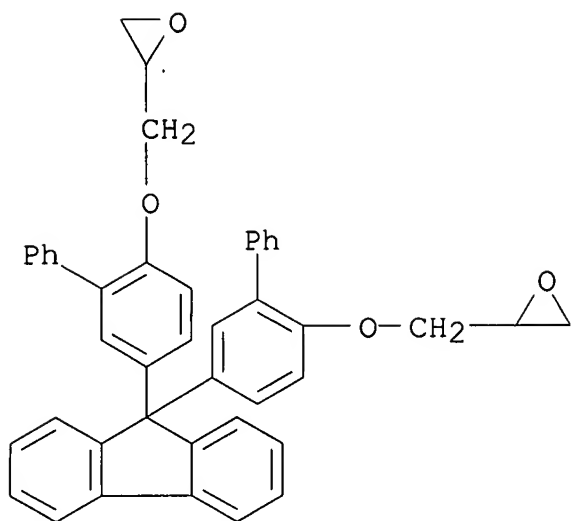
IT 405316-31-6P

(intermediate; photocurable unsatd. resins useful for alkali-developable **photoresists** and use in manuf. of color filters)

RN 405316-31-6 HCA

CN 2-Propenoic acid, 9H-fluoren-9-ylidenebis[[1,1'-biphenyl]-5,2-diyloxy(2-hydroxy-3,1-propanediyl)] ester (9CI) (CA INDEX NAME)



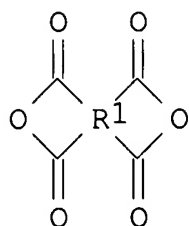


- IC ICM C08G059-17  
ICS C08F002-48; C08F299-02; C08G059-42; C08G063-52; G02B005-20;  
G03F007-004; G03F007-027; G03F007-028
- CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 74, 76
- ST color filter photocurable fluorene bisphenol epoxy resin acrylate  
**photoresist**
- IT Optical filters  
**Photoresists**  
(photocurable unsatd. resins useful for alkali-developable  
**photoresists** and use in manuf. of color filters)
- IT 30581-98-7D, Tetramethylbiphenyl, epoxy resins  
(co-agents; photocurable unsatd. resins useful for  
alkali-developable **photoresists** and use in manuf. of  
color filters)
- IT 29570-58-9, Dipentaerythritol hexaacrylate  
(crosslinker; photocurable unsatd. resins useful for  
alkali-developable **photoresists** and use in manuf. of  
color filters)
- IT **405316-31-6P**  
(intermediate; photocurable unsatd. resins useful for  
alkali-developable **photoresists** and use in manuf. of  
color filters)
- IT 405511-51-5P, 9,9-Bis(4-hydroxy-3-phenyl)fluorene  
di(2-hydroxy-3-acryloyloxypropyl) ether, copolymer with  
benzophenonetetracarboxylic anhydride, ester with  
1,2,3,6-tetrahydrophthalic anhydride  
(photocurable; photocurable unsatd. resins useful for  
alkali-developable **photoresists** and use in manuf. of  
color filters)

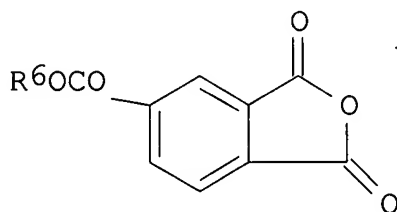
IT 85-43-8, 1,2,3,6-Tetrahydrophthalic anhydride **405316-30-5**  
(reactant; photocurable unsatd. resins useful for  
alkali-developable **photoresists** and use in manuf. of  
color filters)

L45 ANSWER 7 OF 9 HCA COPYRIGHT 2007 ACS on STN  
129:349065 Radiation-sensitive composition containing unsaturated  
carboxylic acid compound for manufacture of color filter. Kawamura,  
Shigeo; Abe, Megumi; Nemoto, Hiroaki; Kumano, Atsushi (JSR Co.,  
Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10274848 A  
**19981013** Heisei, 17 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1997-81253 19970331.

GI



I



II

AB The radiation-sensitive compn. contains  $\geq 1$  selected from  
compds. having an unsatd. group and carboxyl group prepd. by  
reaction of (1) a tetracarboxylic acid dianhydride I ( $R_1$  =  
tetravalent org. group) with a compd.  $R_2R_3$  ( $R_2$  = monovalent org.  
group having  $\geq 1$  radiation-polymerizable unsatd. bond;  $R_3$  = OH  
or amino) and of (2) a compd.  $R_5R_4R_5$  ( $R_4$  = divalent org. group;  $R_5$  =  
OH or amino) with an acid anhydride II ( $R_6$  = monovalent org. group  
having  $\geq 1$  radiation-polymerizable unsatd. bond). A  
radiation-sensitive compn. for color filter is also claimed, which  
contains (a) the above compd., (b) a colorant, (c) a binder polymer  
and a polyfunctional monomer, (d) a photopolymn. initiator, and (e)  
a solvent. The compn. shows high photosensitivity and a high  
quality color filter with high hardness is obtained therefrom.

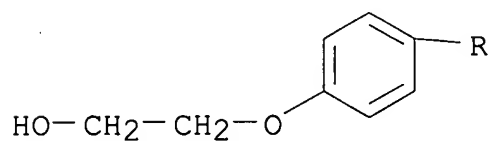
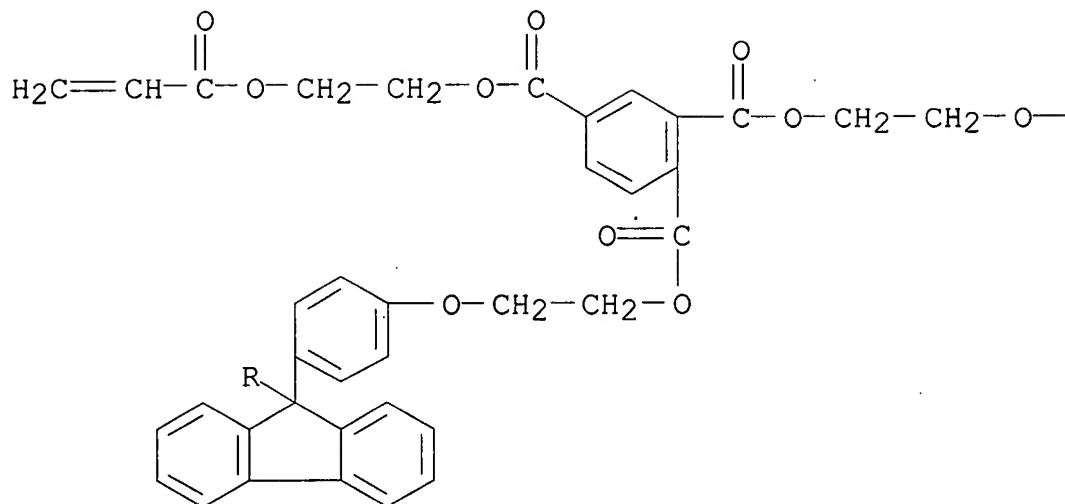
IT **215392-62-4P**

(radiation-sensitive resin compn. contg. compd. having unsatd.  
group and carboxyl group for manuf. of color filter)

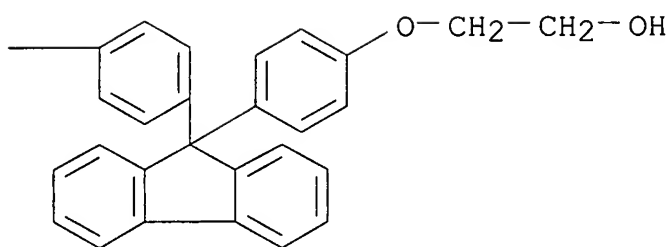
RN 215392-62-4 HCA

CN 1,2,4-Benzenetricarboxylic acid, 1,2-bis[2-[4-[9-[4-(2-  
hydroxyethoxy)phenyl]-9H-fluoren-9-yl]phenoxy]ethyl]  
4-[2-[(1-oxo-2-propenyl)oxy]ethyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM G03F007-027  
 ICS G03F007-027; C08G063-52; C08G073-16; G02B005-20  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST color filter radiation sensitive **resist**; carboxylic acid  
 ester unsatd compd **resist**; amide unsatd compd radiation

sensitive **resist**

IT **Resists**

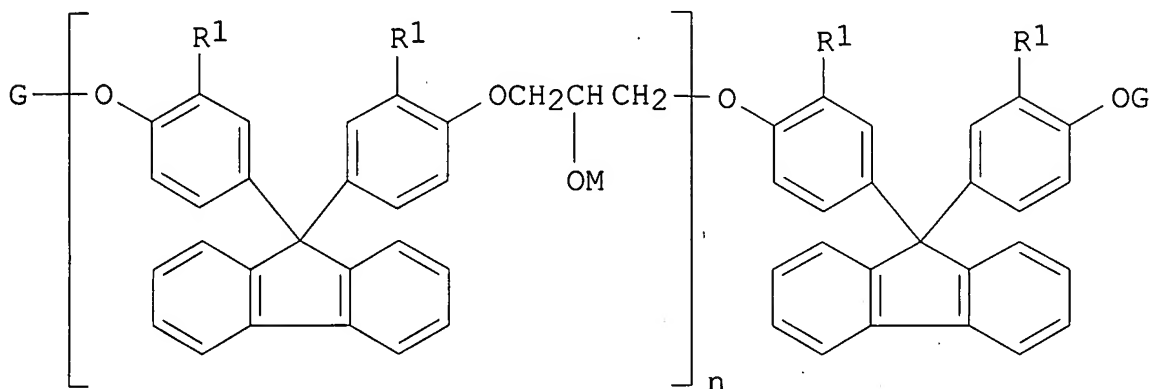
(radiation-sensitive; radiation-sensitive resin compn. contg. compd. having unsatd. group and carboxyl group for manuf. of color filter)

- IT 4687-94-9DP, reaction products with 9,9-bis(4-aminophenyl)fluorene 15499-84-0DP, 9,9-Bis(4-aminophenyl)fluorene, reaction products with bisphenol A diglycidyl ether diacrylate **215392-62-4P**  
(radiation-sensitive resin compn. contg. compd. having unsatd. group and carboxyl group for manuf. of color filter)

L45 ANSWER 8 OF 9 HCA COPYRIGHT 2007 ACS on STN

126:251908 Fluorene group-containing epoxy resin compositions and cured products. Yokoshima, Minoru (Nippon Kayaku Kk, Japan). Jpn. Kokai Tokkyo Koho JP 09040744 A **19970210** Heisei, 8 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-211390 19950728.

GI



I

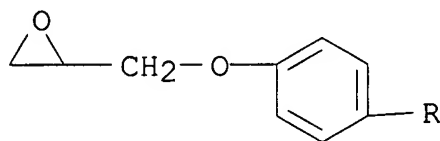
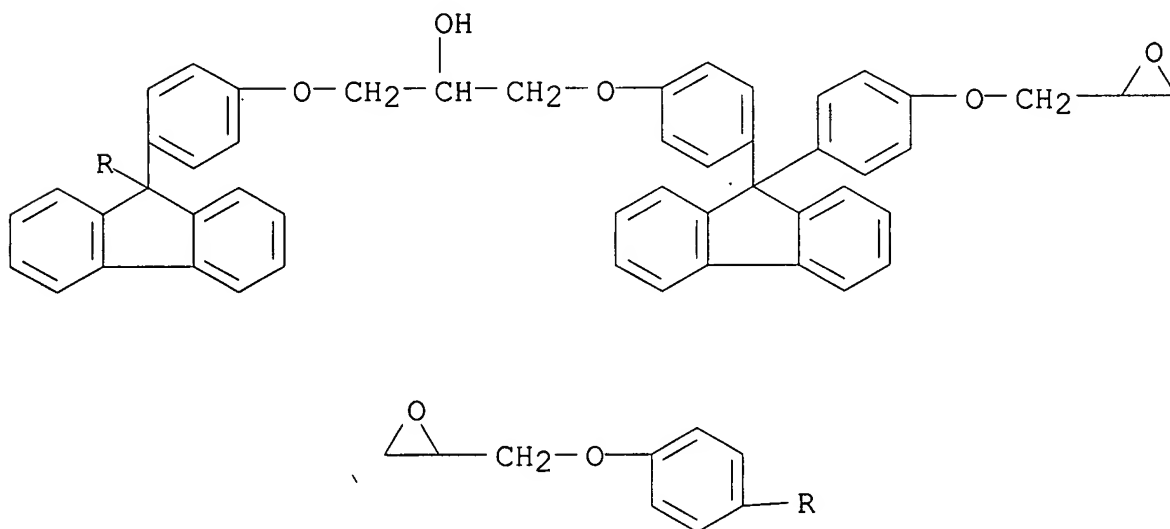
AB The title compns. with good developing property and light sensitivity, useful for printed circuits, etc., contain reaction products of epoxy resins (I; R1 = H, alkyl; M = H, glycidyl; G = glycidyl; n = 0-50; when n = 1, then M = glycidyl; when n ≥ 2, then ≥ 1 of M = glycidyl) and monocarboxylic acids contg. unsatd. groups. Solder **resist** resin compns. and cured products are also claimed. Thus, I (R1 = M = H, n = 1.0) 434, epichlorohydrin 925, and 98.5%-NaOH 21.3 g reacted in DMSO to obtain an epoxy resin, 310 parts of which was treated with 70.6 parts acrylic acid, and the product (69 parts) was roll-kneaded with Kayarad DPHA 3.5, Irgacure 907 3.0, Kayacure DETX-S 0.5, Kayacure BMS 1.0, R-1415-1 (rubber-modified epoxy resin) 10.0, dicyandiamide 0.5, SiO2 10.0, a pigment 0.5, Aerosil 200 1.0, and Modaflow

(leveling agent) 1.0 part to give a compn. showing high light-sensitivity, and good resistance to solvents, acids, and heat.

IT **188579-70-6DP**, reaction products with epichlorohydrin and acrylic acid  
 (fluorene group-contg. epoxy resin-unsatd. carboxylic acid product compns. and cured products)

RN 188579-70-6 HCA

CN 2-Propanol, 1,3-bis[4-[9-[4-(oxiranylmethoxy)phenyl]-9H-fluoren-9-yl]phenoxy]- (9CI) (CA INDEX NAME)



IC ICM C08G059-17  
 ICS C08F299-02; G03F007-038; H05K003-28

CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 74

ST solder **resist** fluorene epoxy resin carboxylate; epoxy resin unsatd carboxylic acid product; acrylic acid epoxy resin adduct **resist**

IT Solder **resists**  
 (fluorene group-contg. epoxy resin-unsatd. carboxylic acid product compns. for)

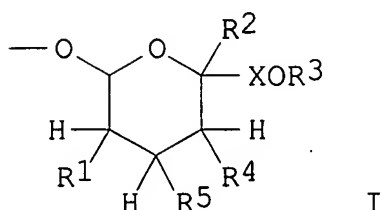
IT 79-10-7DP, Acrylic acid, reaction products with fluorene group-contg. epoxy resin **188579-70-6DP**, reaction products with epichlorohydrin and acrylic acid  
 (fluorene group-contg. epoxy resin-unsatd. carboxylic acid product compns. and cured products)

L45 ANSWER 9 OF 9 HCA COPYRIGHT 2007 ACS on STN

117:36614 Acid labile solution inhibitors and positively and negatively working radiation-sensitive compositions based on them. Schaedeli, Ulrich (Ciba-Geigy A.-G., Switz.). Eur. Pat. Appl. EP 475903 A1

**19920318**, 15 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE. (German). CODEN: EPXXDW. APPLICATION: EP 1991-810707 19910904. PRIORITY: CH 1990-2971 19900913.

GI



AB Non-polymeric compds. contg.  $\geq 1$  arom. ring with  $\geq 1$  tetrahydropyranyloxy substituent I [R1 = R2, halo, alkoxy, aryloxy; R2 = H, alkyl, cycloalkyl, aryl; R3 = hydrocarbyl; R4, R5 = H, halo, alkyl, alkoxy, aryloxy; X = a single bond, CH<sub>2</sub>, (CH<sub>2</sub>)<sub>2</sub>] are esp. suitable for prepn. of neg. and pos. **photoresists** which are preferably used in deep UV microlithog.

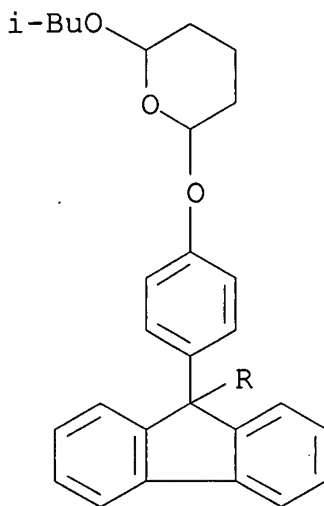
IT **142300-64-9P 142300-65-0P**

(prepn. of, **photoresists** contg., for deep-UV microlithog.)

RN 142300-64-9 HCA

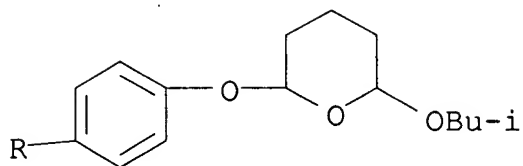
CN 2H-Pyran, 2,2'-[9H-fluoren-9-ylidenebis(4,1-phenyleneoxy)]bis[tetrahydro-6-(2-methylpropoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



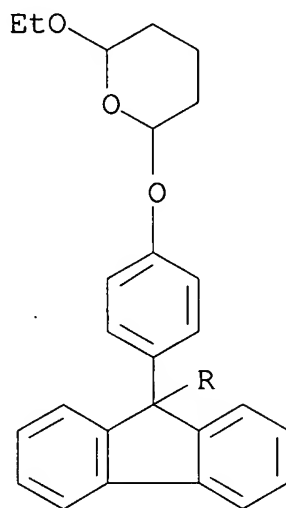


PAGE 2-A

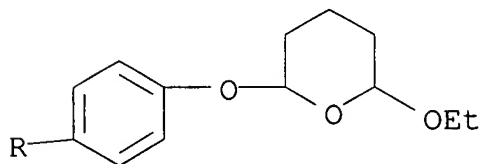


RN 142300-65-0 HCA  
 CN 2H-Pyran, 2,2'-[9H-fluoren-9-ylidenebis(4,1-phenyleneoxy)]bis[6-ethoxytetrahydro- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM C07D309-10  
 ICS G03F007-004  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST lithog **photoresist** tetrahydropyranyloxy arom compd; acid

labile soln inhibitor **photoresist**  
IT **Resists**  
(photo-, tetrahydropyranyloxy arom. acid labile soln. inhibitors  
for)  
IT 142300-63-8P **142300-64-9P 142300-65-0P**  
142300-66-1P 142300-67-2P  
(prepn. of, **photoresists** contg., for deep-UV  
microlithog.)

=> D L46 1-24 TI

L46 ANSWER 1 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Curable polymer compositions with good heat and moisture resistance

L46 ANSWER 2 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Aryl-aryl dendrimers

L46 ANSWER 3 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Long-range electron transfer across molecule-nanocrystalline  
semiconductor interfaces using tripodal sensitizers

L46 ANSWER 4 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Selective upper-rim adamantylation of calix[4]arenes

L46 ANSWER 5 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Episulfides containing fluorene skeleton, their cured products, and  
manufacture for optical materials having resistance to heat and  
light

L46 ANSWER 6 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Water-Soluble Adamantane-Terminated Dendrimers Possessing a Rhenium  
Core

L46 ANSWER 7 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Preparation of fluorene derivatives as materials for polymers

L46 ANSWER 8 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Synthesis of a molecular tripod to anchor molecular coordination  
compounds to semiconductor nanoparticles

L46 ANSWER 9 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI A tower-shaped prototypic molecule designed as an atomically sharp  
tip for AFM applications

L46 ANSWER 10 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Rigid stars: properties and functions

- L46 ANSWER 11 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Rigid star-shaped adamantane multipodes
- L46 ANSWER 12 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Tetrahedral adamantane derivatives. Glass formation and melting behavior
- L46 ANSWER 13 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Antistatic heat-resistant polycarbonates, manufacture thereof, compositions containing the same, and oxyalkylene unit-containing divalent phenol derivatives and manufacture thereof
- L46 ANSWER 14 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Blends of reactive diluents with phenylethynyl-terminated arylene ether oligomers
- L46 ANSWER 15 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Bisbenzocyclobutene thermosetting compound and its preparation
- L46 ANSWER 16 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Polyester compositions for products with high strength and good processability and dyeingability
- L46 ANSWER 17 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Host molecule design via lattice considerations. Crystal structure of the inclusion compound between cis-1,4-bis(9-phenylfluoren-9-yloxymethyl)cyclohexane and dioxane (2:1)
- L46 ANSWER 18 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Synthesis of poly(arylene ethers) based on 9,9-bis(3,5-diphenyl-4-hydroxyphenyl)fluorene
- L46 ANSWER 19 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Carbon-13 NMR spectra of the derivatives of adamantane. Chemical shifts of carbon-13 in 3-substituted 1-aryladamantanes
- L46 ANSWER 20 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Rotational isomerism in fluorene derivatives. XII. Conformational equilibria of 9-substituted 9-(2-methoxymethylphenyl)fluorenes
- L46 ANSWER 21 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI A new approach for the design of inclusion compounds
- L46 ANSWER 22 OF 24 HCA COPYRIGHT 2007 ACS on STN  
TI Alkylation of aromatic compounds with 1-bromoadamantane
- L46 ANSWER 23 OF 24 HCA COPYRIGHT 2007 ACS on STN

TI Biphenylyl-, terphenylyl-, and polyphenylylfluorenes

L46 ANSWER 24 OF 24 HCA COPYRIGHT 2007 ACS on STN

TI 3,3'-Bis(aminomethyl)-1,1'-biadamantane

=> D L46 1,2,4,10,11,18,23 CBIB ABS HITSTR HITRN

L46 ANSWER 1 OF 24 HCA COPYRIGHT 2007 ACS on STN

141:89950 Curable polymer compositions with good heat and moisture resistance. Horie, Michiyasu; Orihara, Tamotsu (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004189901 A 20040708, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-359969 20021211.

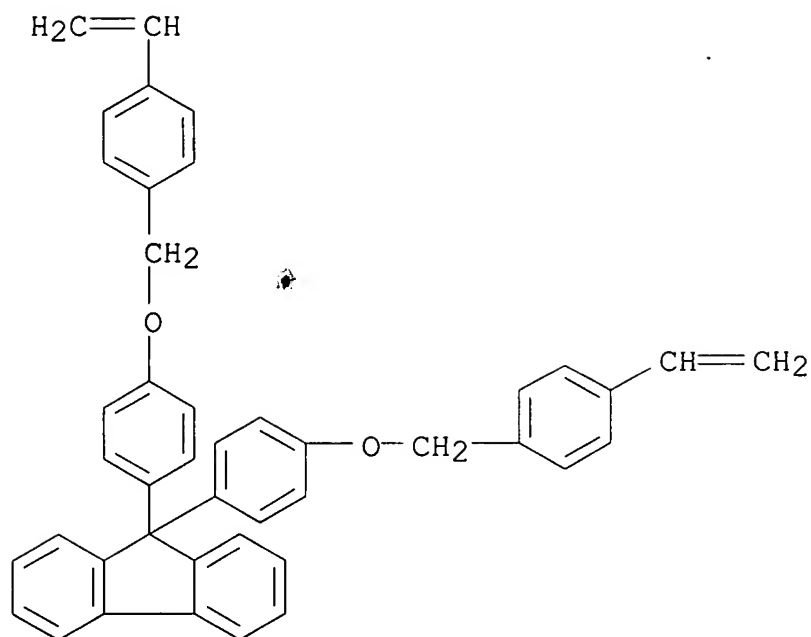
AB Title compns., useful for laminates, molding materials, and semiconductor sealants, comprise (A) vinylbenzyl derivs. having  $\geq 2$  vinylbenzyl ether groups on each benzene ring selected from 6 kinds of Markush structures specified by the document and (B) 0.01-0.1 mol.% peroxides with decompn.-starting temp. (T) 120-140°. Thus, a compn. contg. 2,2-bis[4-(4-vinylbenzyloxy)phenyl]propane, styrene, and 2,5-dimethyl-2,5-bis(benzoylperoxy)hexane (T 129°) was heated at 180° for 1 h in a plate glass cell to give a test piece showing water absorption 0.21% after 2-h boiling, glass transition temp. 204°, and modulus 2900 MPa at 30° and 423 MPa at 300°.

IT **606927-42-8P**

(vinylbenzyl compd.-based curable compn. with good heat and moisture resistance)

RN 606927-42-8 HCA

CN 9H-Fluorene, 9,9-bis[4-[(4-ethenylphenyl)methoxy]phenyl]- (CA INDEX NAME)



IT **606927-42-8P**

(vinylbenzyl compd.-based curable compn. with good heat and moisture resistance)

L46 ANSWER 2 OF 24 HCA COPYRIGHT 2007 ACS on STN

137:208158 Aryl-aryl dendrimers. Burn, Paul Leslie; Samuel, Ifor David William; Lo, Shin-Chun (Isis Innovation Limited, UK). PCT Int.

Appl. WO 2002067343 A1 **20020829**, 51 pp. DESIGNATED

STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR.

(English). CODEN: PIXXD2. APPLICATION: WO 2002-GB739 20020220.

PRIORITY: GB 2001-4177 20010220.

AB Light-emitting devices are described which incorporate, as the light-emitting element, a dendrimer of which the constituent dendrons include a conjugated dendritic structure comprising aryl and/or heteroaryl groups connected to each other via bonds between sp<sup>2</sup> hybridized ring atoms of the aryl or heteroaryl groups. Films of the compds. and color display devices using the compds. are described, as is the use of the compds. in semiconducting devices other than light-emitting devices (e.g., a photodiode, solar cell,

FET, or solid-state triode). Methods of manufg. the light-emitting devices are also described.

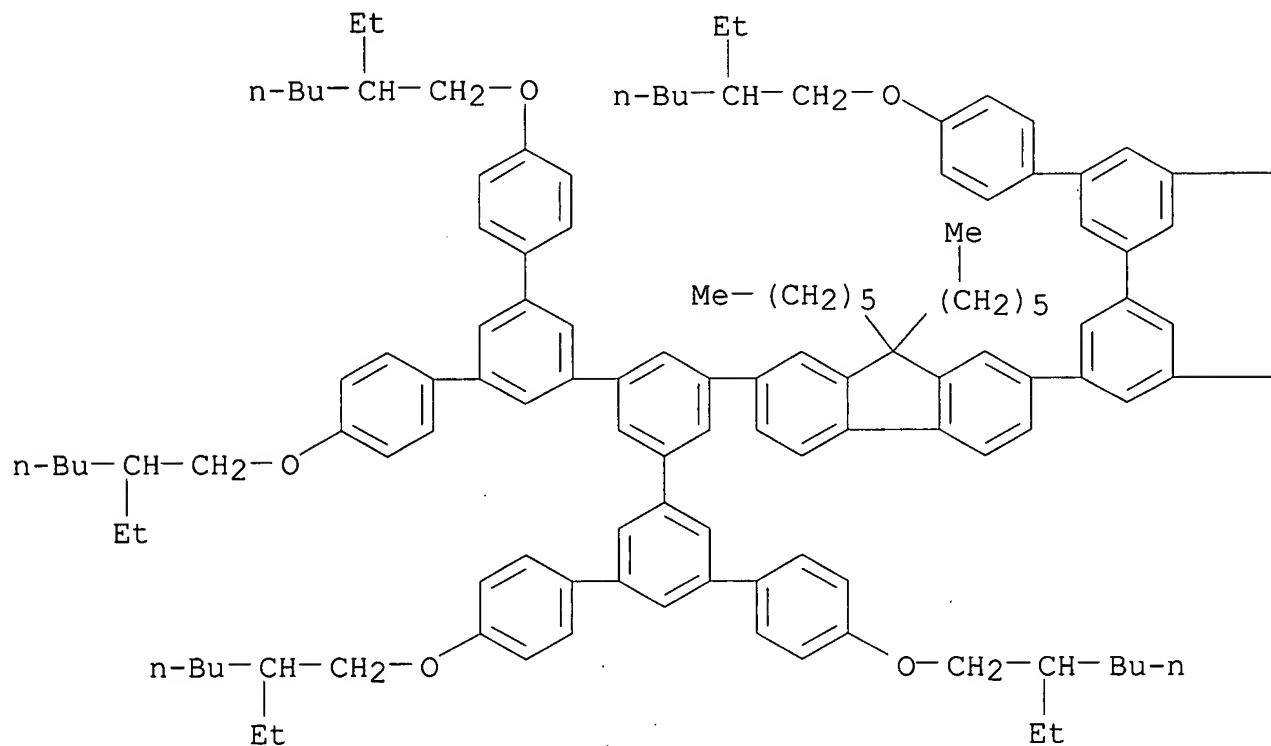
IT **452914-30-6P**

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

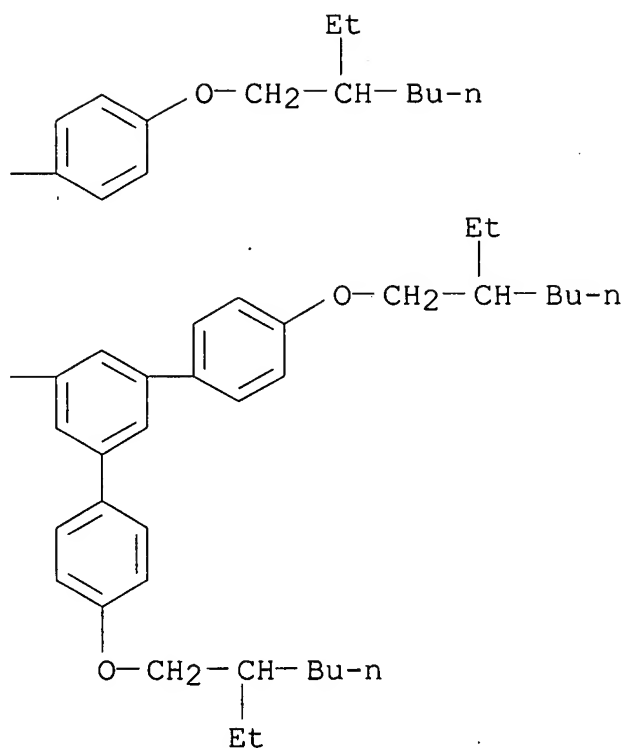
RN 452914-30-6 HCA

CN 9H-Fluorene, 2,7-bis[4,4''''-bis[(2-ethylhexyl)oxy]-5',5''''-bis[4-[(2-ethylhexyl)oxy]phenyl][1,1':3',1''':3'',1''':3''',1''''':3''''',1''''':3'''''-quinquephenyl]-5''-yl]-9,9-dihexyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

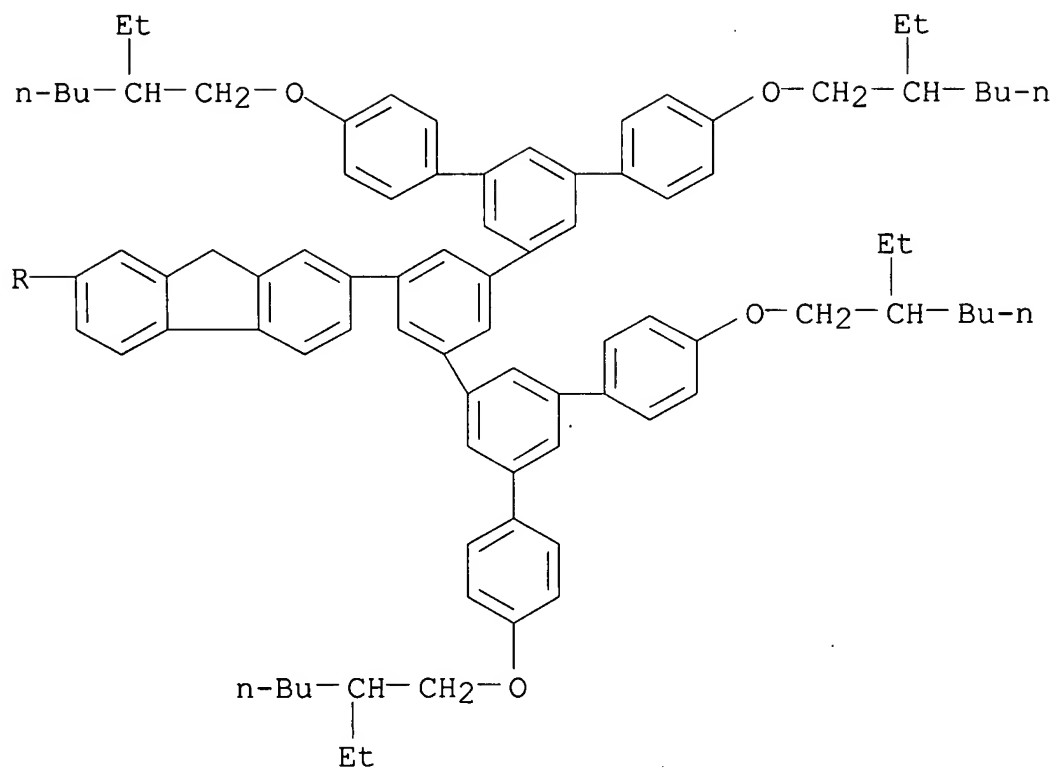
IT **452914-31-7P**

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

RN 452914-31-7 HCA

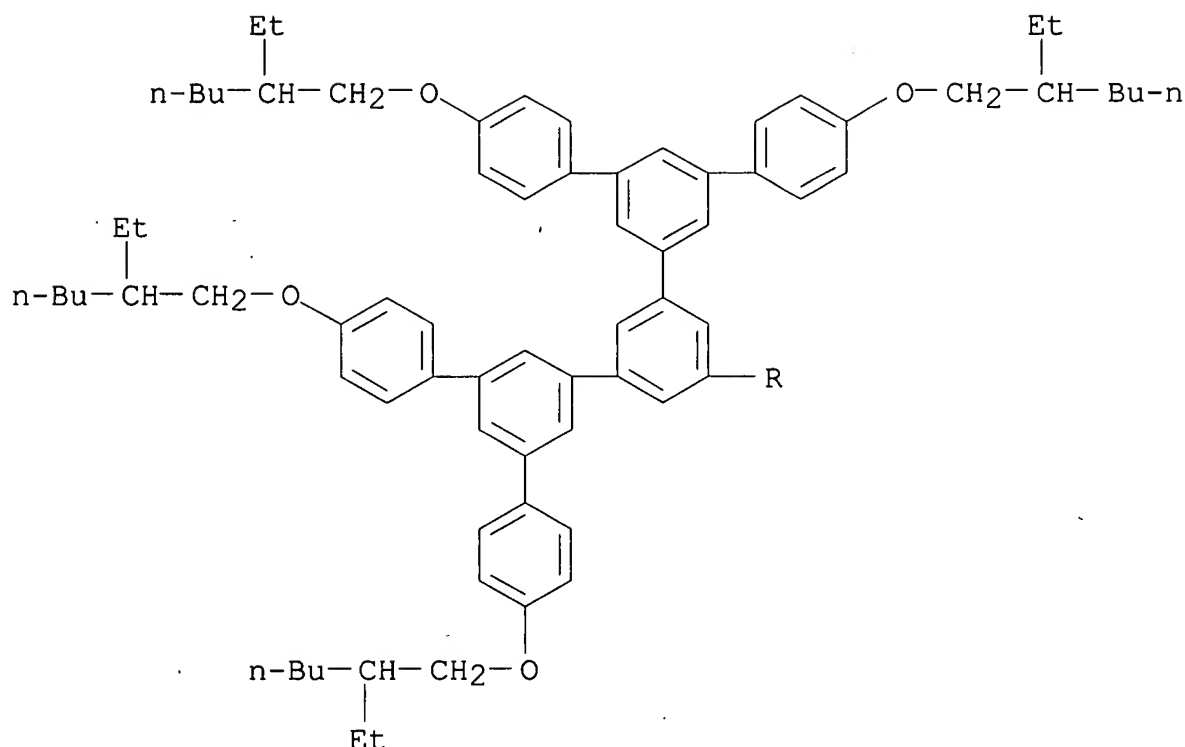
CN 9H-Fluorene, 2,7-bis[4,4''''-bis[(2-ethylhexyl)oxy]-5',5''''-bis[4-[(2-ethylhexyl)oxy]phenyl][1,1':3',1'':3'',1''':3''',1''''-quinquephenyl]-5''-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A





PAGE 2-A

IT **452914-30-6P**

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

IT **452914-31-7P**

(light-emitting devices incorporating aryl-aryl dendrimers and the fabrication and films and devices incorporating the dendrimers)

L46 ANSWER 4 OF 24 HCA COPYRIGHT 2007 ACS on STN

136:5788 Selective upper-rim adamantylation of calix[4]arenes. Shokova, E. A.; Khomich, A. N.; Kovalev, V. V. (Faculty of Chemistry, Moscow State University, Moscow, 119899, Russia). Russian Journal of Organic Chemistry (Translation of Zhurnal Organicheskoi Khimii), 37(5), 612-619 (English) **2001**. CODEN: RJOCEQ. ISSN: 1070-4280. OTHER SOURCES: CASREACT 136:5788. Publisher: MAIK Nauka/Interperiodica Publishing.

AB Lower-rim mono- and diacylated calix[4]arenes [acyl = PhCO, 3,5-(O<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CO] undergo selective adamantylation with 3-Y-1-adamantanols (Y = H, CHMe<sub>2</sub>, 4-MeC<sub>6</sub>H<sub>4</sub>) in trifluoroacetic acid at the free phenolic fragments of the macroring. The reaction provides a convenient preparative route to di-, tri-, and

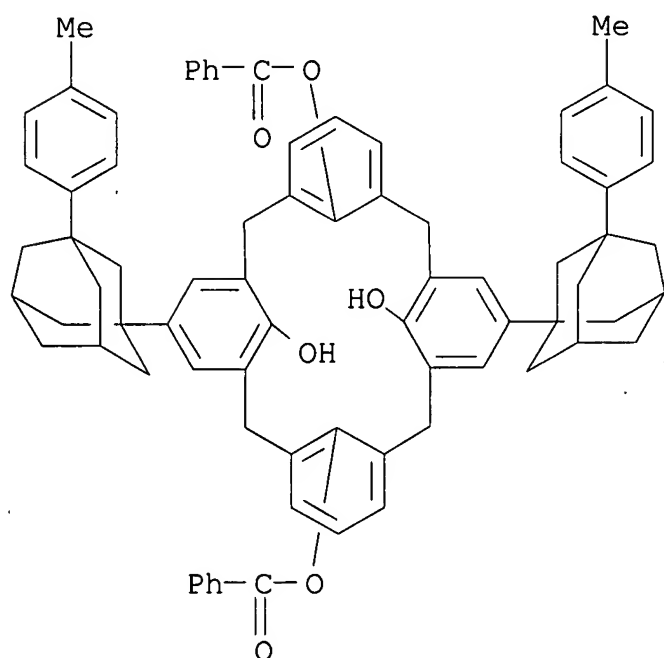
tetraadamantylated calix[4]arenes.

IT **374755-43-8P**

(selective upper-rim adamantylation of calix[4]arenes)

RN 374755-43-8 HCA

CN Pentacyclo[19.3.1.13,7.19,13.115,19]octacos-  
1(25),3,5,7(28),9,11,13(27),15,17,19(26),21,23-dodecaene-25,26,27,28-  
tetrol, 5,17-bis[3-(4-methylphenyl)tricyclo[3.3.1.13,7]dec-1-yl]-,  
25,27-dibenzoate (9CI) (CA INDEX NAME)



IT **374755-43-8P**

(selective upper-rim adamantylation of calix[4]arenes)

L46 ANSWER 10 OF 24 HCA COPYRIGHT 2007 ACS on STN

129:343885 Rigid stars: properties and functions. Heitz, Walter;  
Meckel-Jonas, Claudia; Neuhaus, Ralf; Roth, Mark D.; Stumpflen,  
Volker; Wendorff, Joachim H. (Philipps-Universitat Marburg,  
Fachbereich Chemie, Institut fur Physikalische Chemie, Kernchemie  
und Makromolekulare Chemie und Wissenschaftliches Zentrum fur  
Material-wissenschaften, Marburg, 35032, Germany). Polymers for  
Advanced Technologies, 9(9), 549-558 (English) **1998**.  
CODEN: PADTE5. ISSN: 1042-7147. Publisher: John Wiley & Sons Ltd..

AB The properties of star-shaped adamantane multipodes with different  
types of rigid branches with various lengths are discussed. The  
expectation based on theor. considerations was that such multipodes  
would display an enhanced soly. both in low molar mass solvents and  
in polymer matrixes. These multipodes have a 3-dimensional  
star-like shape, are able to crystallize but can also be obtained in

the glassy state, and they show a relaxational behavior typical for polyarylates. They are sol. in various low molar mass org. solvents much better than linear rigid mols. of the same chem. constitution and of similar length and they are miscible in polymer matrixes up to 30 wt.-%. The multipodes influenced the dielec. and mech. properties of the matrix polymers significantly.

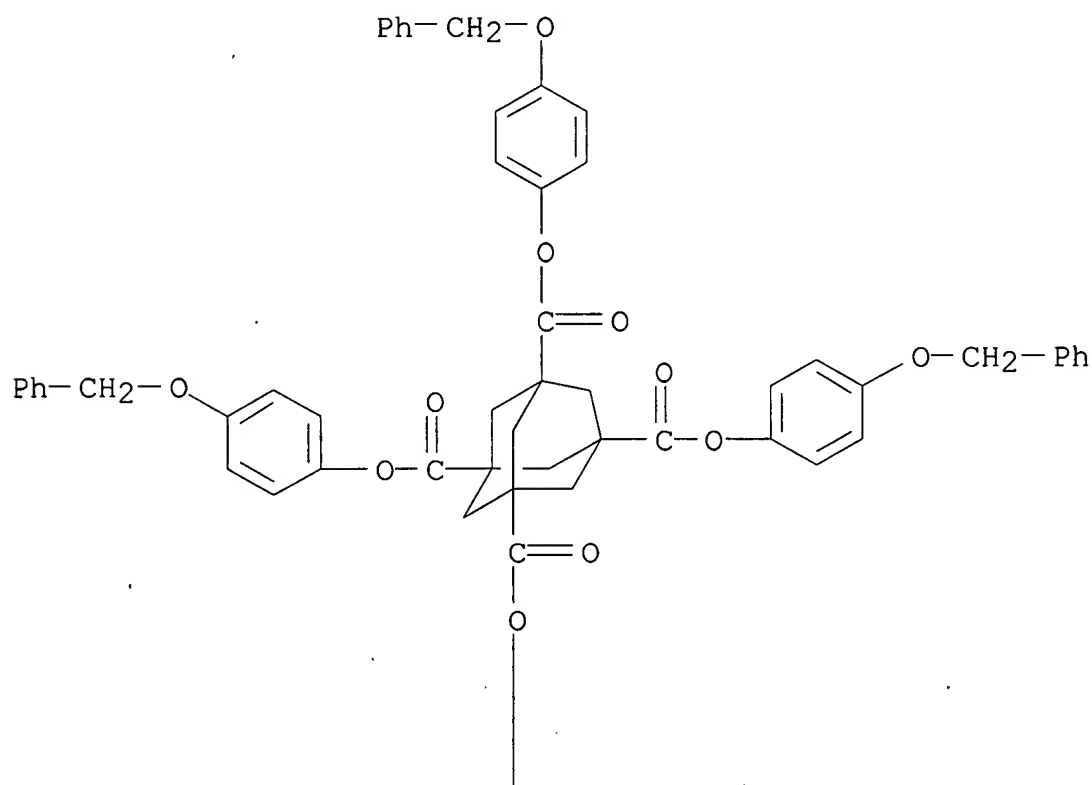
IT 203188-17-4 203188-19-6 203188-20-9  
203188-22-1

(dielec. and mech. properties of arom. matrix glassy polymers  
contg. rigid star-shaped adamantane multipodes)

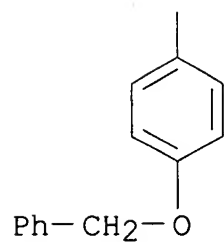
RN 203188-17-4 HCA

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
tetrakis[4-(phenylmethoxy)phenyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A

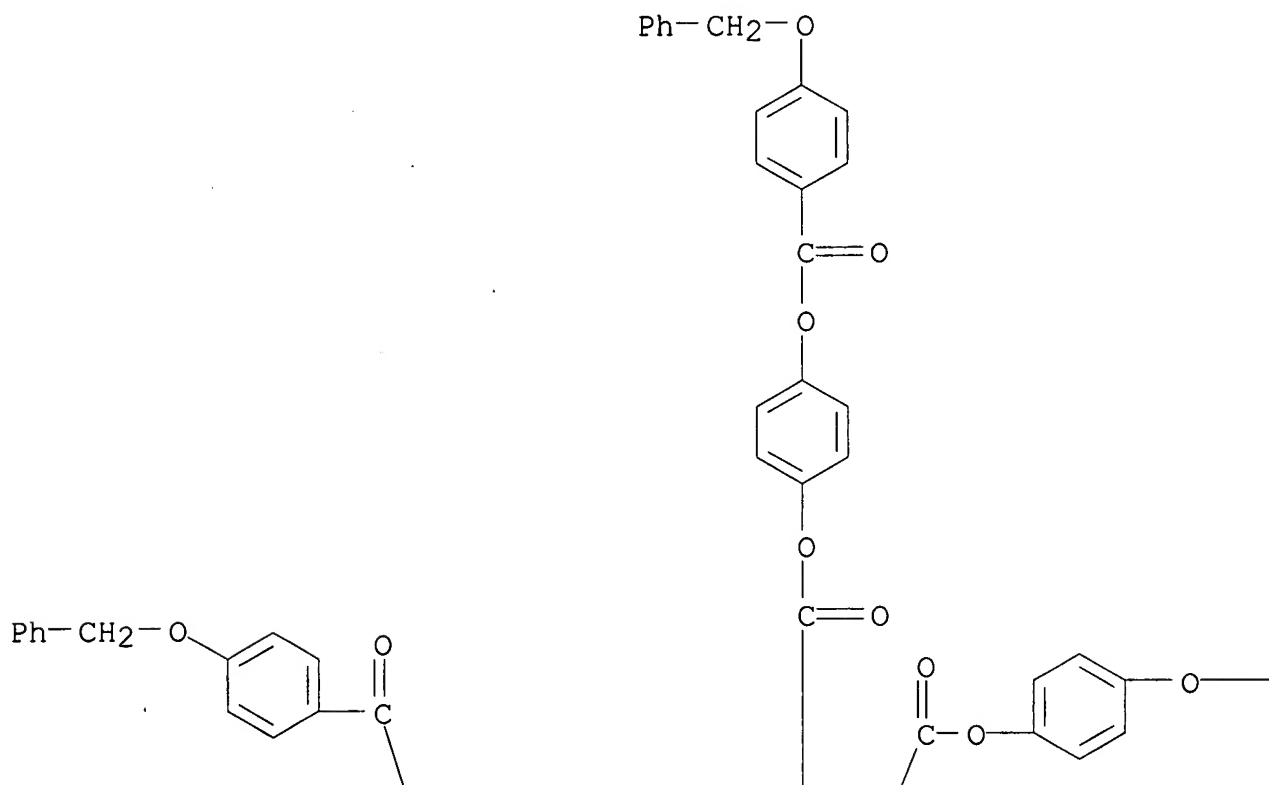


PAGE 2-A

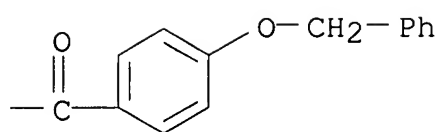


RN 203188-19-6 HCA  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
 tetrakis[4-[[4-(phenylmethoxy)benzoyl]oxy]phenyl] ester (9CI) (CA  
 INDEX NAME)

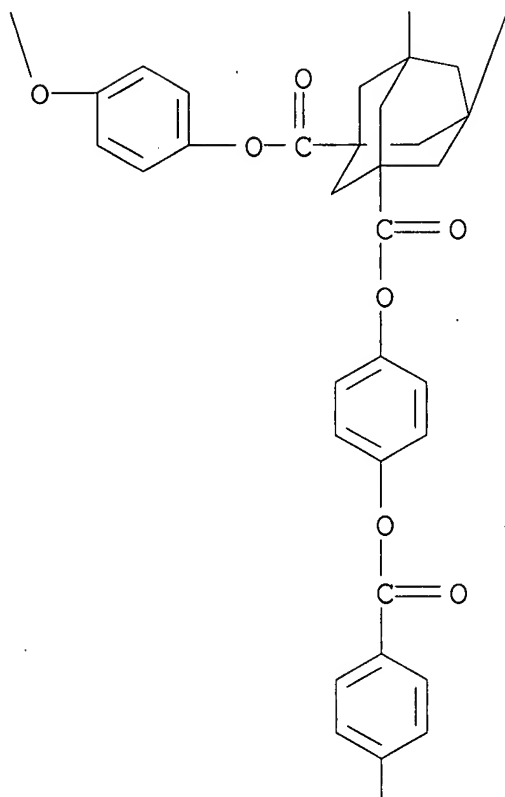
PAGE 1-A



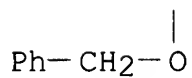
PAGE 1-B



PAGE 2-A

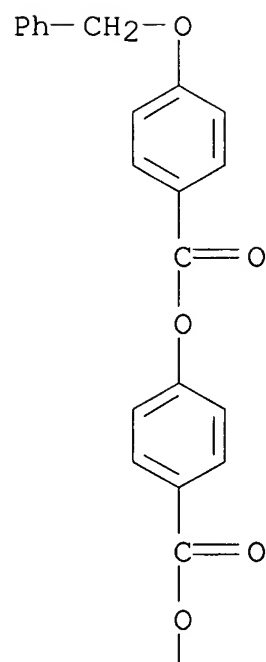


PAGE 3-A

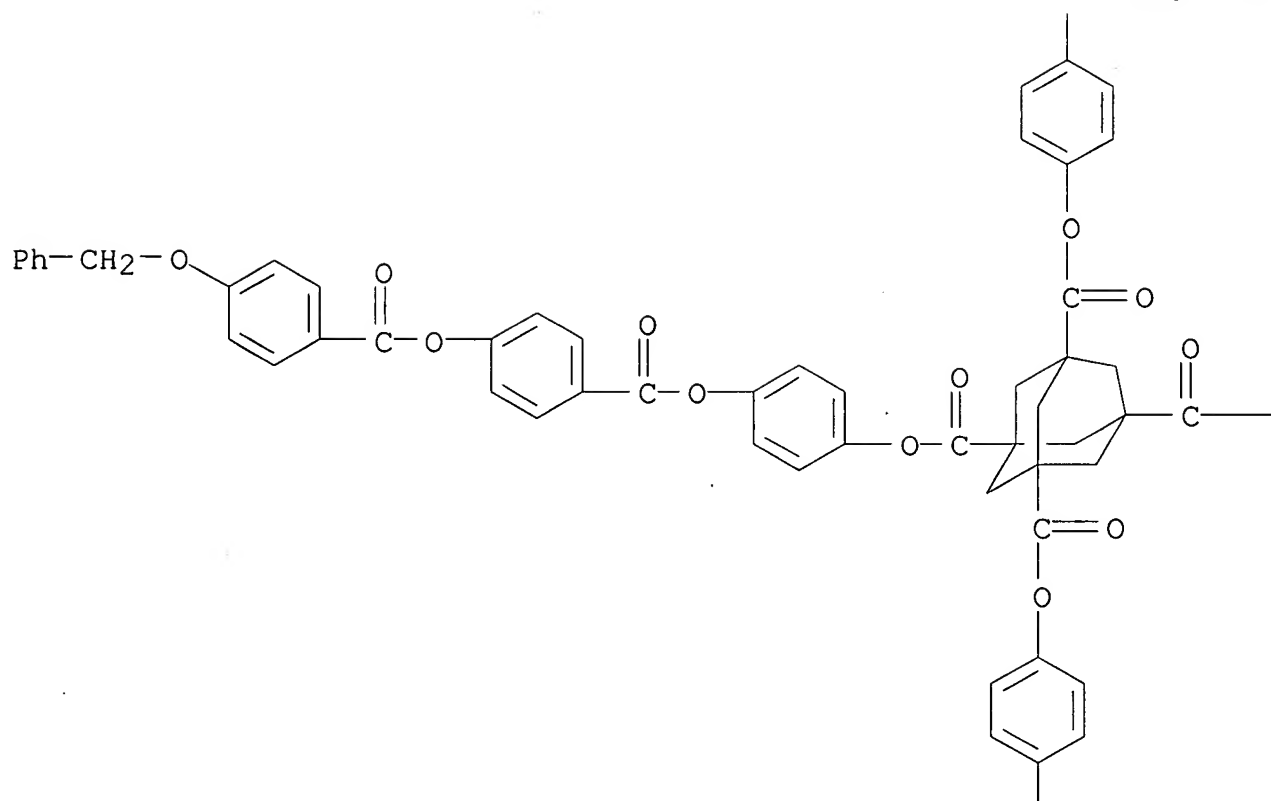


RN 203188-20-9 HCA  
 CN Tricyclo[3.3.1.1.3,7]decane-1,3,5,7-tetracarboxylic acid,  
 tetrakis[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]phenyl]  
 ester (9CI) (CA INDEX NAME)

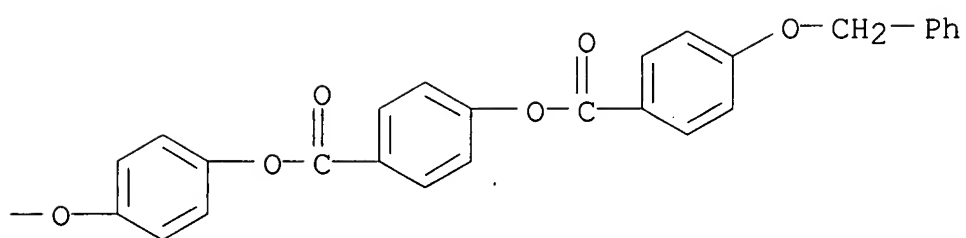
PAGE 1-A



PAGE 2-A

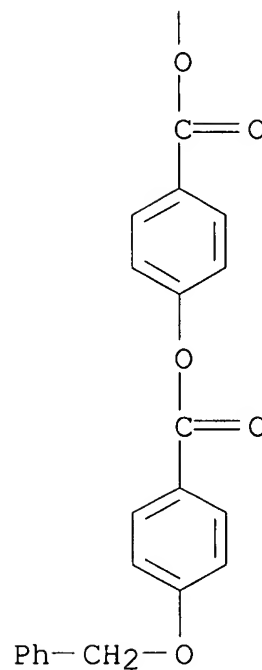


PAGE 2-B





PAGE 3-A

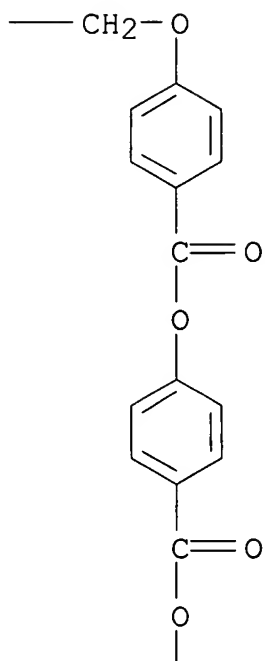


RN 203188-22-1 HCA  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
 tetrakis[4-[[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]benzoyl]oxy]phenyl] ester (9CI) (CA INDEX NAME)

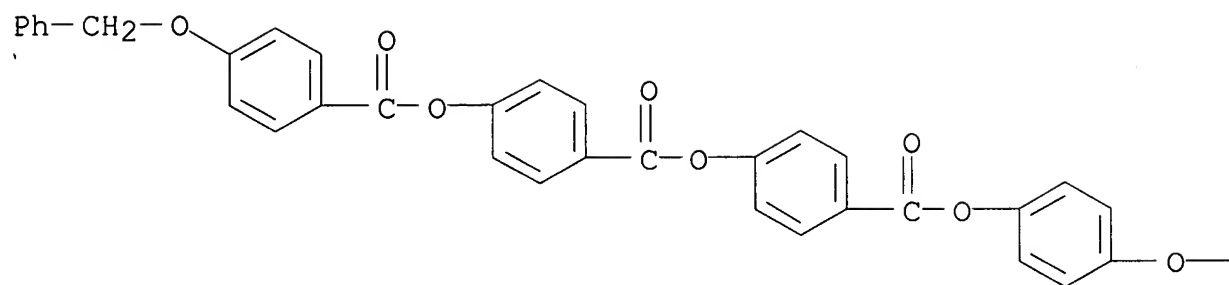
PAGE 1-A

Ph—

PAGE 1-B

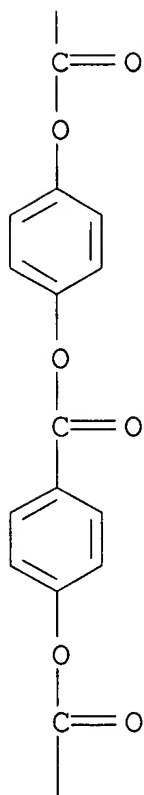


PAGE 2-A





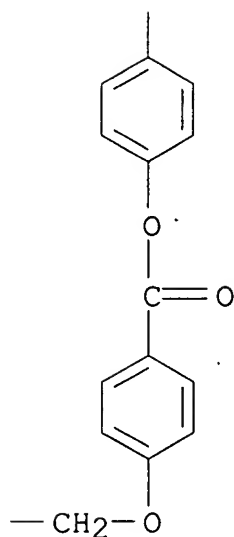
PAGE 3-B



PAGE 4-A

Ph—

PAGE 4-B



IT 203188-17-4 203188-19-6 203188-20-9  
203188-22-1

(dielec. and mech. properties of arom. matrix glassy polymers  
contg. rigid star-shaped adamantane multipodes)

L46 ANSWER 11 OF 24 HCA COPYRIGHT 2007 ACS on STN

128:180202 Rigid star-shaped adamantane multipodes. Heitz, W.;  
Meckel-Jonas, C.; Roth, M. D.; Wendorff, J. H. (Fachbereich Chemie,  
Institut Physikalische Chemie, Kernchemie Makromolekulare Chemie,  
Philipps-Universitaet, Marburg, D-35032, Germany). Acta Polymerica,  
49(1), 35-44 (English) 1998. CODEN: ACPODY. ISSN:  
0323-7648. Publisher: Wiley-VCH Verlag GmbH.

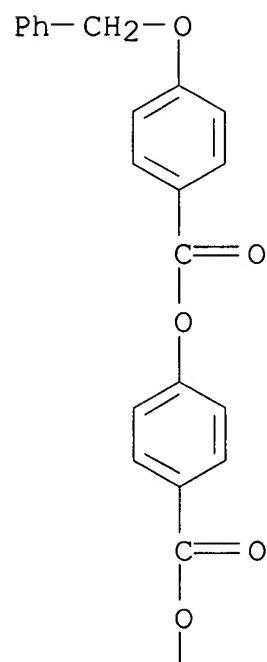
AB The synthesis of star-shaped adamantane multipodes with rigid  
branches based on 4-HOC6H4CO2H is reported. These multipodes are  
able to crystallize but can also be obtained in the glassy state.  
They are sol. in various low-molar mass org. solvents, in fact, much  
better than linear rigid mols. of similar length, and they are  
miscible in polymer matrixes up to concns. of 30 wt%. The  
multipodes influence the dielec. and mech. properties of the  
polymers significantly.

IT 203188-20-9P  
(prepn. and glass transition)

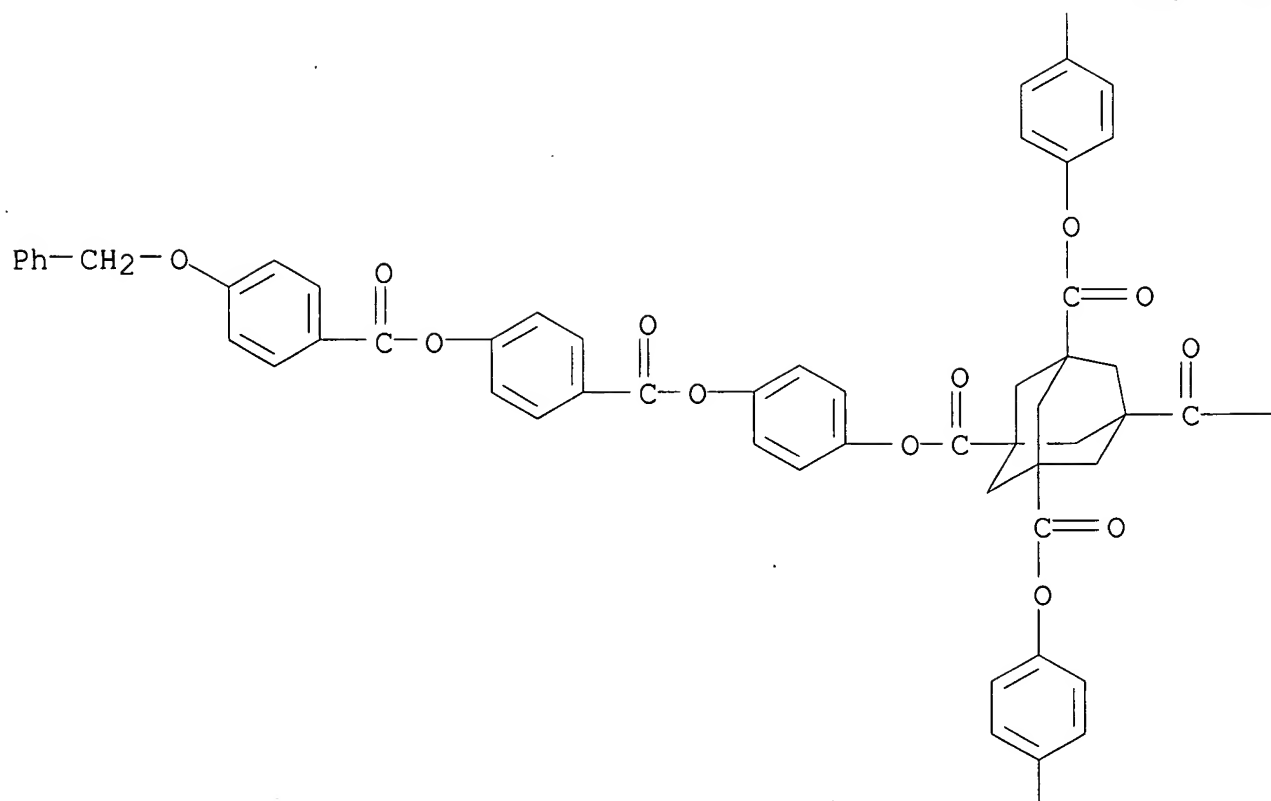
RN 203188-20-9 HCA

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
tetrakis[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]phenyl]  
ester (9CI) (CA INDEX NAME)

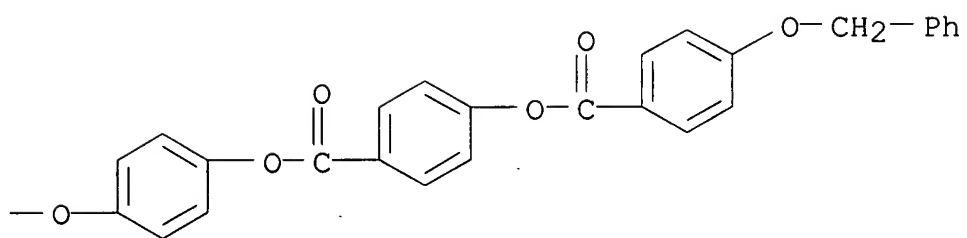
PAGE 1-A



PAGE 2-A

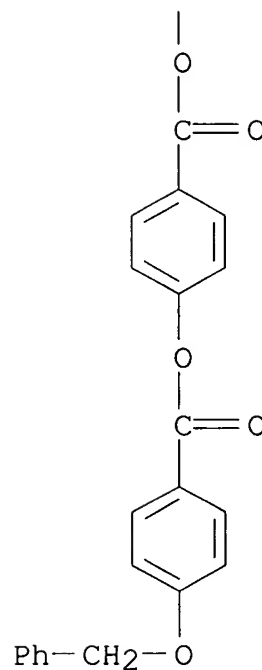


PAGE 2-B



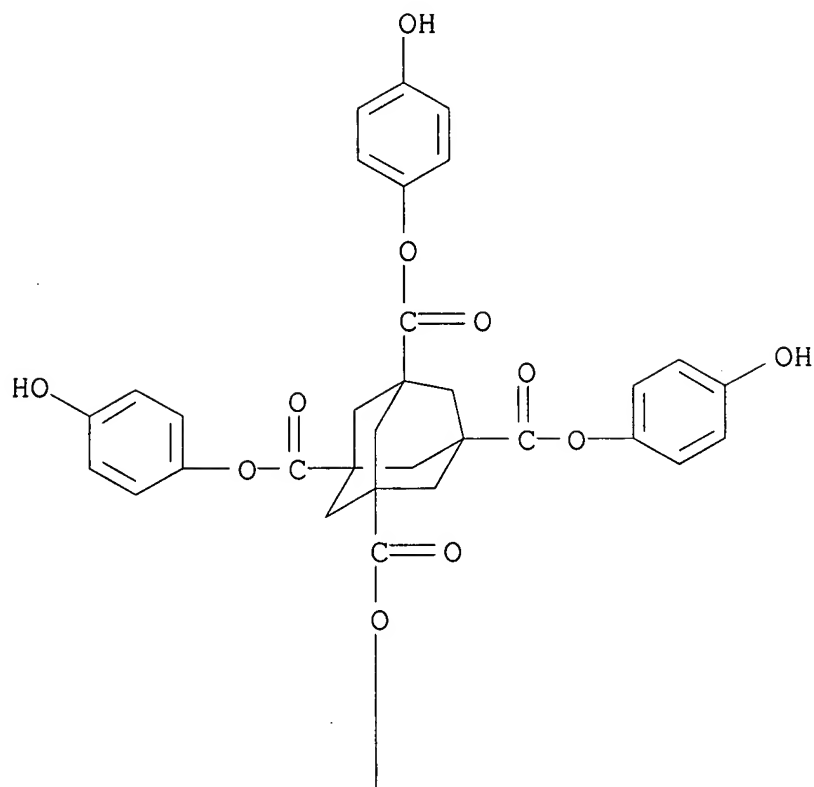


PAGE 3-A

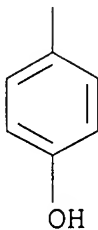


IT **203188-18-5P 203188-21-0P**  
(prepn. of rigid star-shaped adamantane multipodes)  
RN 203188-18-5 HCA  
CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
tetrakis(4-hydroxyphenyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A

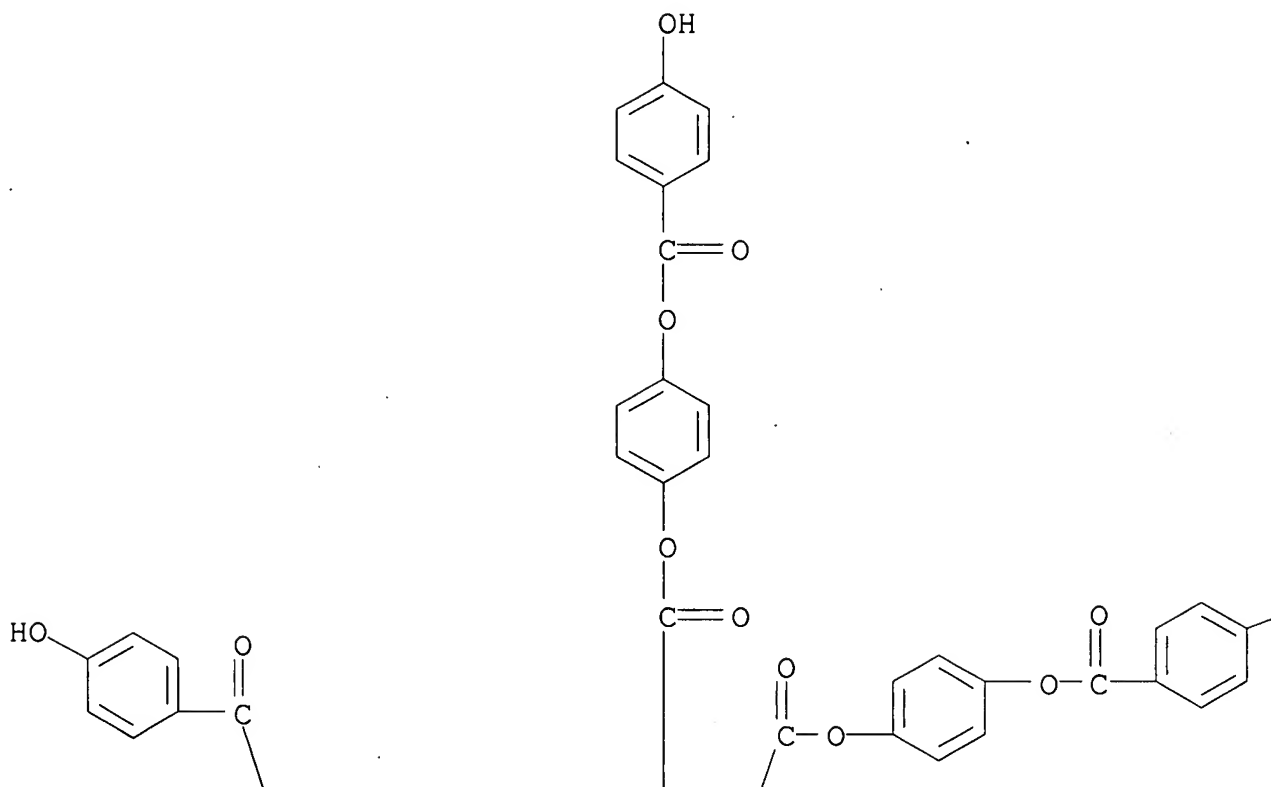


PAGE 2-A



RN 203188-21-0 HCA  
CN Tricyclo[3.3.1.13,7]decane-1,3,5,7-tetracarboxylic acid,  
tetrakis[4-[(4-hydroxybenzoyl)oxy]phenyl] ester (9CI) (CA INDEX  
NAME)

PAGE 1-A



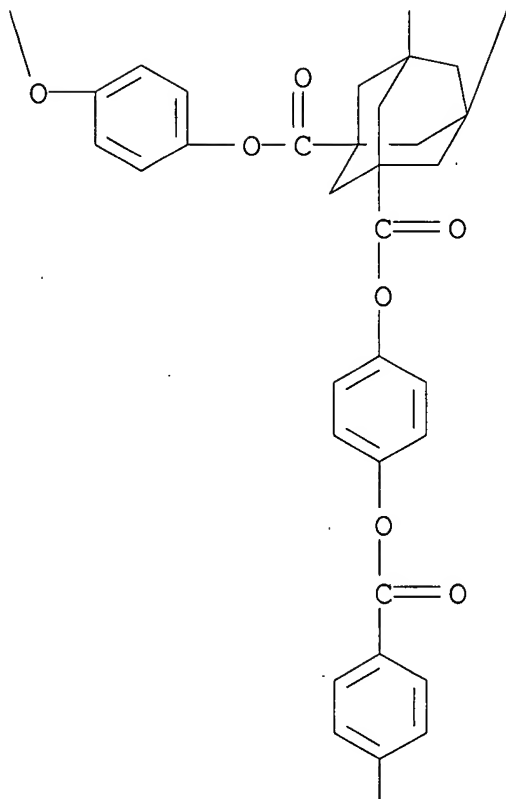
LEE 10/531,208

Page 54

PAGE 1-B

— OH

PAGE 2-A



PAGE 3-A

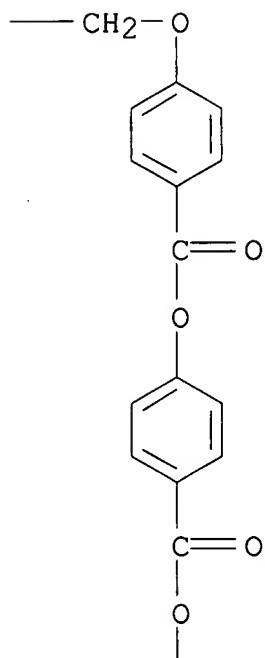
|  
OH

IT **203188-22-1P**  
 (prepn., mol. structure, and glass transition)  
 RN 203188-22-1 HCA  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
 tetrakis[4-[[4-[[4-[[4-(phenylmethoxy)benzoyl]oxy]benzoyl]oxy]benzoyl]oxy]phenyl] ester (9CI) (CA INDEX NAME)

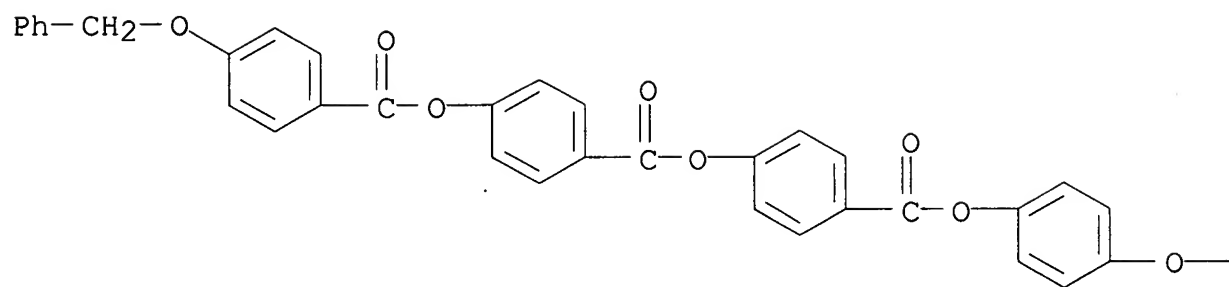
PAGE 1-A

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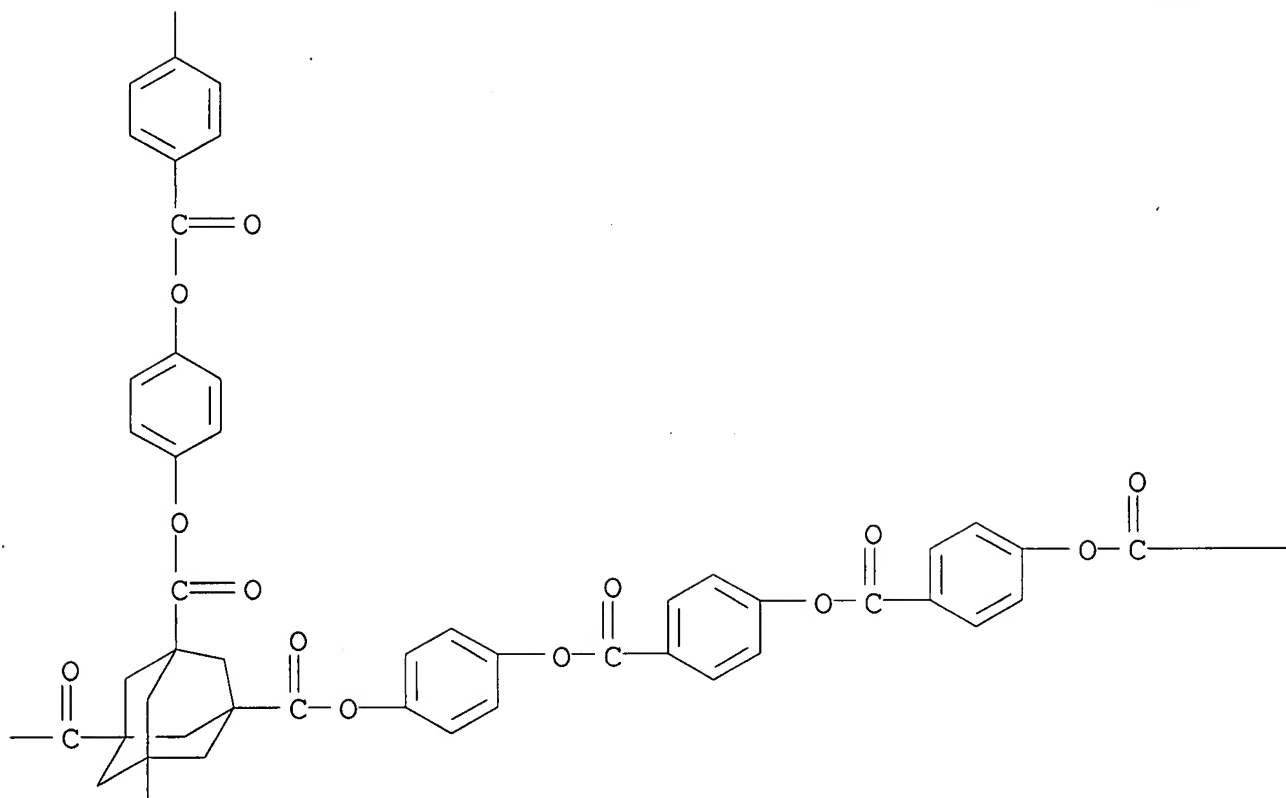
PAGE 1-B



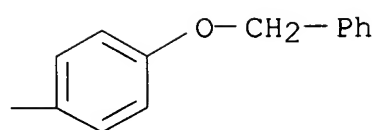
PAGE 2-A



PAGE 2-B

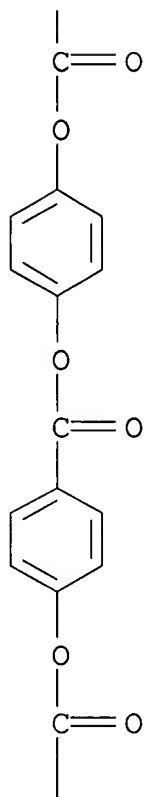


PAGE 2-C





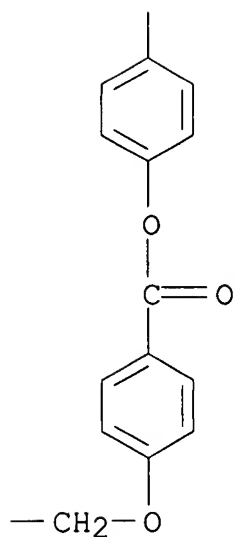
PAGE 3-B



PAGE 4-A

Ph—

PAGE 4-B

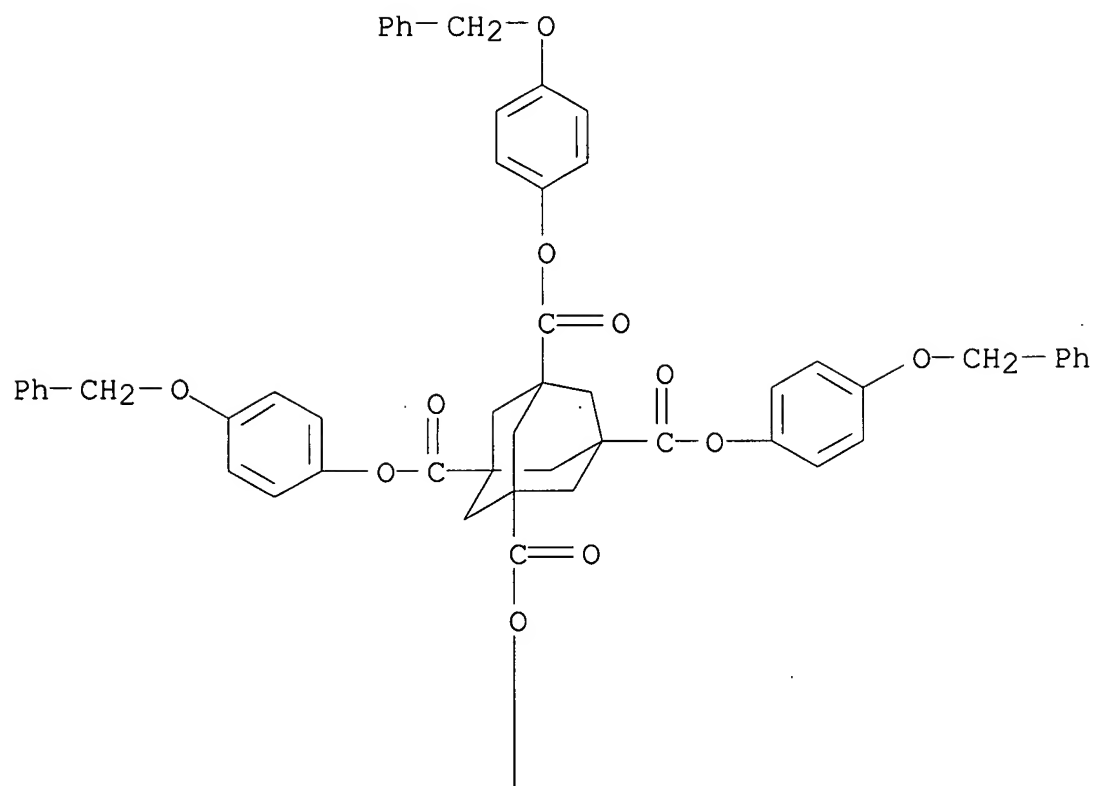
IT **203188-17-4P 203188-19-6P**

(prepn., soly. in THF, and glass transition)

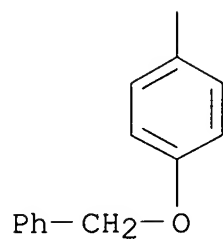
RN 203188-17-4 HCA

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1,3,5,7-tetracarboxylic acid,  
tetrakis[4-(phenylmethoxy)phenyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A

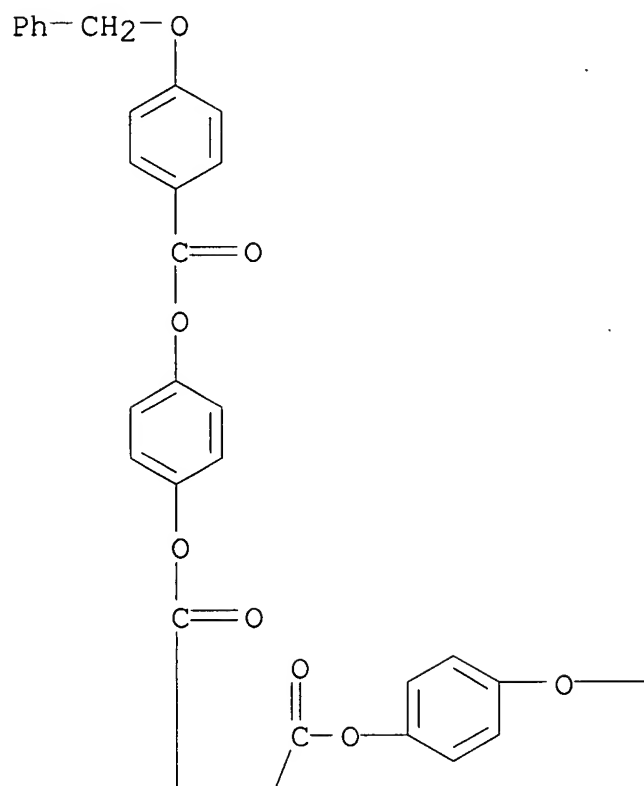
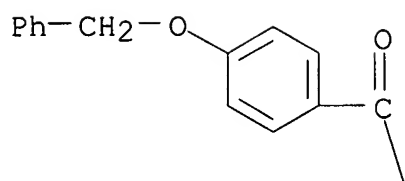


PAGE 2-A

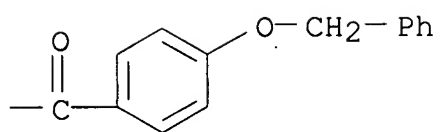


RN 203188-19-6 HCA  
 CN Tricyclo[3.3.1.1.3]decane-1,3,5,7-tetracarboxylic acid,  
 tetrakis[4-[[4-(phenylmethoxy)benzoyl]oxy]phenyl] ester (9CI) (CA  
 INDEX NAME)

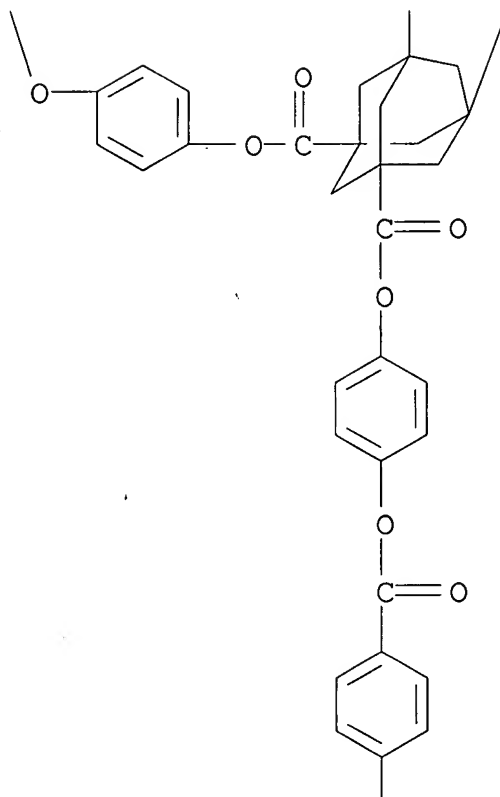
PAGE 1-A



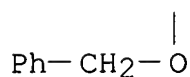
PAGE 1-B



PAGE 2-A



PAGE 3-A



- IT **203188-20-9P**  
(prepn. and glass transition)
- IT **203188-18-5P 203188-21-0P**  
(prepn. of rigid star-shaped adamantane multipodes)
- IT **203188-22-1P**  
(prepn., mol. structure, and glass transition)
- IT **203188-17-4P 203188-19-6P**  
(prepn., soly. in THF, and glass transition)

L46 ANSWER 18 OF 24 HCA COPYRIGHT 2007 ACS on STN  
 115:30042 Synthesis of poly(arylene ethers) based on  
 9,9-bis(3,5-diphenyl-4-hydroxyphenyl)fluorene. Wang, Z. Y.; Hay, A.  
 S. (Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.). Journal  
 of Polymer Science, Part A: Polymer Chemistry, 29(7), 1045-52

(English) 1991. CODEN: JPACEC. ISSN: 0887-624X.

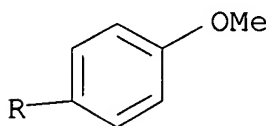
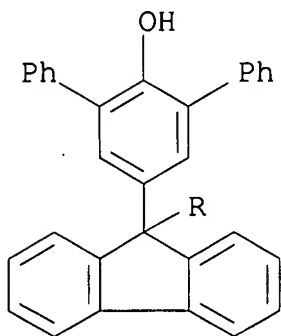
AB A novel bisphenol, i.e., 9,9-bis(3,5-diphenyl-4-hydroxyphenyl)fluorene, synthesized in high yield by the transalkylation of 9,9-bis(4-hydroxyphenyl)fluorene and 2,6-diphenylphenol, was polymd. with 3 arom. difluorides to give poly(arylene ethers) having mol. wt. 34,800-51,300 and inherent viscosity 0.27-0.43 dL/g. The polymers had glass transition temp. 236-262° and did not lose wt. below 350°, with a 10% wt. loss occurring at >550°. The polymers were readily sol. in chlorinated solvents such as CH<sub>2</sub>Cl<sub>2</sub>, CHCl<sub>3</sub>, and ClCH<sub>2</sub>CH<sub>2</sub>Cl at room temp. Attempts to synthesize an analogous monomer, bis(3,5-diphenyl-4-hydroxyphenyl)diphenylmethane, were described.

IT 134671-66-2P

(prepn. of, as byproduct in transalkylation of bis(methoxyphenyl)fluorene and diphenylphenol)

RN 134671-66-2 HCA

CN [1,1':3',1''-Terphenyl]-2'-ol, 5'-[9-(4-methoxyphenyl)-9H-fluoren-9-yl]- (9CI) (CA INDEX NAME)



IT 134671-66-2P

(prepn. of, as byproduct in transalkylation of bis(methoxyphenyl)fluorene and diphenylphenol)

L46 ANSWER 23 OF 24 HCA COPYRIGHT 2007 ACS on STN  
70:96488 Biphenyl-, terphenyl-, and polyphenylfluorenes. Van Venrooy, John J. (Sun Oil Co.). U.S. US 3429908 19690225, 5 pp. (English). CODEN: USXXAM. APPLICATION: US 1966-529630 19660224.

GI For diagram(s), see printed CA Issue.

AB The title compds. form metal halide complexes, useful as chem.

intermediates and pH indicators. Thus, 1.5 parts  $\text{AlCl}_3$  was added slowly to a mixt. of 20 parts  $\text{CS}_2$ , 0.85 part  $\text{CCl}_4$ , and 1.25 parts  $\text{Ph}_2$ , the mixt. stirred at room temp. for 2 hrs., and the  $\text{CS}_2$  decanted from the semi-solid ppt. to yield the  $\text{AlCl}_3$  complex of I ( $\text{R}_1 = \text{OH}$ ,  $\text{R}_2 = \text{H}$ ,  $\text{R}_3 = \text{Ph}$ ) (II), which was hydrolyzed to give 1.35 parts of a pink powder, 90% of which was extd. with  $\text{Me}_2\text{CO}$  to give II. The preferred molar  $\text{AlCl}_3$ - $\text{Ph}_2$  was 1.5:1-2.0:1. II was warmed with excess  $\text{MeOH}$  to give II Me ether. II Et ether was similarly prepd. Using  $\text{CHCl}_3$  in place of  $\text{CCl}_4$  gave some I ( $\text{R}_1 = \text{R}_2 = \text{H}$ ,  $\text{R}_3 = \text{Ph}$ ). Similarly prepd. were 9-methoxy-6-phenyl-9-(m-terphenyl-3-yl)fluorene, and 9-hydroxy-7-phenyl-9-(p-terphenyl-4-yl)fluorene. Analogous products were prepd. from p-sexiphenyl and p-polyphenyl. Treating II  $\text{AlCl}_3$  complex with ethylene glycol gave the diether.

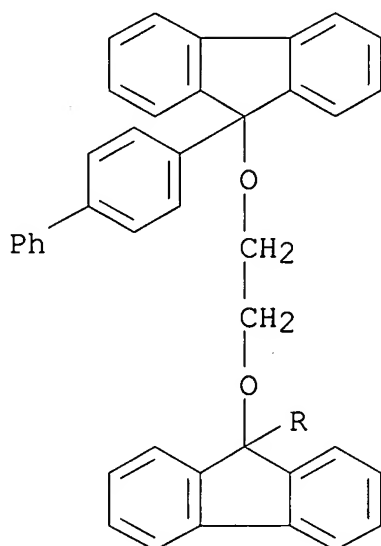
IT **22653-12-9P**

(prepn. of)

RN 22653-12-9 HCA

CN Ethane, 1,2-bis[[9-(4-biphenyl)fluoren-9-yl]oxy]- (8CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

